

AMERICAN NURSERYMAN

The Nurseryman's Forte: To Make America More Beautiful and Fruitful

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The Nurseryman's Forte: To Make America More Beautiful and Fruitful

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CONTENTS

Beginning in the Nursery Business.....	5	By John J. Pinney	
Fertilizers' Action in the Soil.....	7	By L. C. Chadwick	
More Unusual Trees and Shrubs.....	9	By Gustaf E. Malmberg	
Teaching Nursery Practice in College.....	13		
Some Observations on Composites.....	18	By C. W. Wood	
Editorial.....	4	Trade Meetings.....	22
—The Season Ahead.....	4	—Meeting Calendar.....	22
—For Returned Veterans.....	4	—Oregon Meeting.....	22
—Paper Quotas Lifted.....	4	—California Convention.....	22
Just Still Required.....	6	—North Jersey Meeting.....	22
Heads A. A. N. Committee on		—Princeton Party.....	22
Public Relations.....	6	—Wisconsin Outing.....	22
—M. R. Cashman.....	6	—Farewell Luncheon to	
Veterans of our Profession.....	8	Dr. Tukey at Geneva.....	22
—William C. Price.....	8	Readers' Comments.....	24
Taxus Mealy Bug.....	8	—Johnny Applesseed.....	24
New Head of Tennessee		—Johnny's Orchard.....	24
Division of Horticulture.....	12	—Horticultural Training.....	24
—Joseph C. McDaniell.....	12	New Books and Bulletins.....	26
C. B. Link to Brooklyn.....	12	—Plant Growth.....	26
His Competitors Give Veteran		—Basic Horticulture.....	26
a Fresh Start.....	20	—Grapes and Wines.....	26
		—Disease Control Charts.....	26
		—Living War Memorials.....	27
		—Bulletins Received.....	27
		Root-pruning.....	28
		DDT in Cold-water Paint.....	33
		Pyrethrum Unrestricted.....	33
		Erect Factory.....	35
		Now Makes Lawn Mowers.....	35
		Hodges at San Antonio.....	36
		Obituary.....	37
		—William A. Toole.....	37
		Camellias on the Air.....	37
		Cover Illustration.....	38
		—Ilex Cornuta.....	38
		Catalogs Received.....	39
		Notes from a Nurseryman's	
		Wife.....	40

INDEX TO ADVERTISERS

American Bulb Co.....	33	Fike Nurseries.....	25	Mullins Plant Farms.....	28
American Chemical Paint Co.....	41	Forest Nursery Co.....	14-15-16-17	National Landscape Institute.....	40
American Color & Chem. Co.....	38	Garden Shop, Inc.....	37	New Amsterdam Import Co.....	42
American Florist Supply Co.....	41	Gardner's Nurseries.....	26	Niagara Horticultural Products.....	40
Andrews Nursery Co.....	29	Greenspon's Son Pipe Corp., Jos.....	37	Pacific Coast Nursery.....	31
Ariens Co.....	35	Grimshaw Citrus Nursery.....	30	Peterson & Dering.....	31
Atkins Sons, L.....	42	Harrison Bros. Nursery.....	29	Pontiac Nursery Co.....	27
Bagatelle Nursery.....	21	Herbst Bros.....	1	Portland Wholesale Nursery.....	31
Bailey Nurseries, J. V.....	27	Hess' Nurseries.....	26	Princeton Nurseries.....	23
Basham, V. P.....	29	High Valley Farm.....	24	Rambo's Wholesale Nursery, L. J.....	29
Bobbin & Atkins.....	23	Hill Nursery Co., D.....	44	Ra-Pid-Gro Corp.....	39
Boxwood Gardens.....	27	Hobbs & Sons, Inc., C. M.....	27	Reed, H. R.....	24
Boyd Nursery Co.....	27	Holton & Hunkel.....	27	Rich & Sons Nursery.....	30
Brownell Roses.....	23	Horsford, Wm. Crosby.....	20-21	Rickert Nurseries.....	22
Brush Rose Nursery, Paul.....	28	Howard-Hickory Co.....	33	Robinson, E. D.....	23
Bryant's Nurseries.....	19	Howard Rose Co.....	31	Roller's Nursery.....	28
Burr & Co., Inc., C. R.....	21	Hudson Mfg. Co., H. D.....	43	Scarl's Sons, W. N.....	29
Burton's Hilltop Nurseries.....	27	Humphreys Landscape Service.....	25	Schupp Florist Supply Co.....	37
California Nursery Co.....	32	Hydroponic Chemical Co., Inc.....	42	Schuykill Chemical Co.....	40
Carroll Gardens.....	25	Ilgenfritz' Sons Co., I. E.....	20	Shepard Nurseries.....	23
Carscallen Nursery Label Co.....	37	Jackson & Perkins Co.....	26	Sherman Nursery Co.....	27
Chase Co., Benjamin.....	42	Jewell Nurseries, Inc.....	25	Sherwood Nursery Co.....	30
Classified Ads.....	34-35	Johnston, Wm. A.....	31	Siebethaler Co.....	24
Cloverset Flower Farm.....	40	Kalloy Bros. Co.....	27	Sizemore, Charles.....	35
Coast Agricultural Fertilizer Co.....	30	Kelly Bros. Nurseries, Inc.....	29	Slatton Nursery Co.....	24
Coe, Converse & Edwards Co.....	24	Ker-O-Kil Mfg. Co.....	35	Smith Corp., W. T.....	25
Colby Co., Eli.....	40	Koster Nursery Co.....	18-21	Sneed Nursery Co.....	25
Colby Pioneer Peat Co.....	42	Krieger's Wholesale Nursery.....	29	Somerset Rose Nursery, Inc.....	35
Cole, R. M.....	23	LaBars' Rhododendron Nursery.....	23	Staneck & Son.....	25-28
Cottage Gardens.....	26	Lake's Shenandoah Nurseries.....	27	State Road Nursery.....	25
Curtis Nurseries.....	21	Leonard & Sons, A. M.....	38	Storrs & Harrison Nurseries.....	28
Cuttler & Downing Co.....	29	Lewis Nurseries, Dee.....	32	Studley Nursery, Walter A.....	22
Cuttler & Vennard Nursery.....	32	Lindig's Mfg. Co.....	40	Sudbury Soil Test Lab.....	41
Dayton Fruit Tree Label Co.....	42	Lovett, Lester C.....	24	Suncrest Evergreen Nurseries.....	25
Del Rancho Fortuna.....	32	Maclean, Jean.....	38	Tobacco By-Products & Chem. Co.....	41
de St. Aubin & Bro., Inc., Eugene.....	23	Maloney Bros. Nursery Co.....	23	Verhalen Nursery Co.....	26
Domoto, Taichi.....	31	Markham's Ohio Nursery.....	26	Want Ads.....	36
Doty & Doerner, Inc.....	31	Max Nursery.....	26	Weller Nurseries Co.....	27
Dow Chemical Co.....	35-38	McGill & Son, A.....	31	Westminster Nurseries.....	21
Dummett, Arthur.....	21	McHutchison & Co.....	38	Williams & Harvey Nurseries.....	39
Evergreen Nursery Co.....	27	Meehan Co., Thos. B.....	21-42	Willis Nursery Co.....	19
Fairview Evergreen Nurseries.....	27	Milton Nursery Co.....	31	Wolfe's Nursery.....	33
Farmers Wholesale Nursery.....	25	Moran, E. C.....	33	Woodruff & Sons, Inc., F. H.....	32
Felins Tying Machine.....	38	Morse Co., A. B.....	42	Wright, C. D.....	29
File Nursery.....	27	Mount Arbor Nurseries.....	2	Zephyr Hill Nursery.....	21

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AMERICAN NURSERYMAN

F. R. KILNER, Editor

Editorial

THE SEASON AHEAD.

The end of the war, accompanied by the laying off of great numbers of workers in war factories and the prospect for the early return of many men from military service, has caused some nurserymen to inquire as to the effect of economic conditions on the sale of nursery stock in the season ahead.

The speedy release of controls by the War Production Board has stimulated reconversion of factories to production of civilian merchandise. The great demand for many items unobtainable for several years is counted upon to take up the temporary slack in employment within a short time. The President's policies have won praise in almost every quarter for the free rein he has given business at this time. The pace of reconversion has exceeded even the more optimistic predictions of those who advocated the prompt lifting of war controls.

Two factors in the situation give some reason for uncertainty. One is the apparent disposition of many workers released from war factories to take a vacation while unemployment compensation is available to them and while they adjust their ideas as to wages. Many are quite sensible about the change from war wages to civilian rates and hours, but others are disposed to keep looking for employment with the high pay they enjoyed when the government was purchasing its military necessities.

Many women and overage workers will retire to the home, leaving the labor market permanently. And so long as there are over 10,000,000 men in service and they are not discharged at any higher rate than a few hundred thousand a month, a rate that will not be attained for some time, the labor market is going to be short. Everybody will be employed who wants to work. Service industries, office forces and mercantile establishments have been short of help for a long time. Business expansion will take place in many enterprises, aside from those favored by the return to civilian production.

Hence the condition of the labor market and its effect upon wage scales is an important consideration and one which is beyond prediction so early after the war's end.

The Mirror of the Trade

The other factor of important influence is the insistence of the Office of Price Administration on curtailing profit margins on goods produced after reconversion. While manufacturers are permitted to increase their prices, dealers and retailers are asked to absorb part of the margin in order to keep prices close to a 1942 level. How far that is possible depends upon conditions which vary according to industry. But public opinion will force a change if the big manufacturers store the washing machines, electrical equipment, etc., which they are making, instead of putting them on the market. The administration actually has accepted the maintenance of high prices by the actions of the War Labor Board and of the salary stabilization unit of the Treasury Department in not only removing wage ceilings, but in actually encouraging increases in wages and salaries now that the war is over. Settlement of the controversy over reconversion pricing is probably near at hand.

In the lag which may possibly occur because of these two factors, there may be a short period in which the national figures on production will look worse than actual business transactions justify. Just when this will occur depends, in all probability, upon the action of OPA and upon the speed of industrial conversion, as well as upon the rate of reemployment or of the willingness of the workers to be reemployed.

But such a setback in industrial activity, if it occurs, seems likely to fall within a relatively short time and to have passed before the active nursery season next spring. Some observers expect a high level of industrial production to be regained by the end of this year.

The general business picture inspires confidence in the business community, and the old customers of nurserymen are expected to return soon, those with home grounds to renovate and to landscape. Such work has been postponed for lack of labor by many landscape firms, and a con-

[Concluded on page 6.]

FOR RETURNED VETERANS.

Recent issues of this magazine have carried reviews of pamphlets published by the University of Illinois and Dun & Bradstreet, Inc., among others, giving advice about the problems of starting in business, for the particular benefit of the many war veterans who have indicated the

wish to establish their own enterprises on return to civilian life.

The Department of Commerce has prepared similar material to instruct the boys on the training necessary and the problems involved in choosing various occupations.

Since the nursery industry seems on the threshold of great expansion and opportunities are numerous in this field, similar service seems desirable in regard to our profession. Moreover, the utmost in satisfaction to the public in the era of expansion ahead will depend upon the character and success of all those engaged in the various branches of the nursery business.

So plans were carefully laid for a series of articles to instruct the beginner in the nursery industry, and their preparation has been undertaken by a prominent nurseryman, born in the business and a studious observer of its methods and operations during his lifetime experience in this field.

The introductory article appears on the opposite page. If you wish reprints of these articles mailed to servicemen or to beginners in business whom you think will be benefited, to the industry's general advantage, the editor will welcome your cooperation in extending the usefulness of this series of articles.

PAPER QUOTAS LIFTED.

All restrictions on the use of paper have been lifted by the War Production Board, with the exception of newsprint. Publishers and printers may now use for catalogs, books and magazines as much paper as is available to them. Firms issuing catalogs may find the supply of certain types of paper, especially enamel or coated, inadequate to meet their early needs. But now that the war is over, they are free to use whatever they can buy.

This is good news to subscribers and advertisers of the American Nurseryman, which has been restricted in its operations by the quota limit. Limitations on the use of advertising space are lifted. Subscriptions, for a time largely limited to renewals, are now obtainable by any persons or firms eligible. Of course, the circulation will be confined, as hitherto, to persons and firms engaged in the growing or selling of nursery stock on a commercial basis and to those engaged in allied occupations.

Beginning in the Nursery Business

By John J. Pinney

So you plan to go into the nursery business!

Welcome to one of the most fascinating businesses in the world. It is never monotonous, never cut and dried; every day brings different problems.

It is a business that gives its owner endless satisfaction in the knowledge that it is forever producing health-giving fruit, life-renewing gardens and breath-taking landscapes, bringing beauty to rich and poor, young and old impartially. It is a business of which you need never be ashamed, but always proud. You will be associated with a fine group of sincere gentlemen, oftentimes leaders in their communities, always respected citizens. A man who loves trees and plants can't be very bad at heart.

The nurserymen's wares are the only commodities one can buy that increase in value and give a greater measure of satisfaction as the years go by. You can justly feel that you are rendering a necessary and important service to mankind when you increase the fruitfulness and beauty of the "good earth." If you wish to realize the full import of this, imagine a land without fruits and flowers, trees and shrubs, gardens and landscapes.

What is the future of the nursery business? Leaders in the industry believe that the opportunities for a nurseryman are greater now than at any time in the past. Among the many reasons for this optimism are:

1. The United States is short many hundreds of thousands of homes. The long ban on private construction, together with the wear and tear on existing homes and the rapid increase in population, makes the housing situation critical. The United States is rapidly approaching a population of 150,000,000. It will be many years before home building can catch up with the needs of the people.

It is a pretty safe bet that most of these new homes will be landscaped. Nearly every home builder now realizes that the job is not complete until the grounds have been planted. Some of the planting jobs are pitifully poor, but they usually create a desire for something better on the part of the owner. Many of the homes constructed just before the war have not been landscaped at all because landscape men did not have enough help. These unlandscaped homes constitute a huge backlog of

Supplementing general pamphlets issued by governmental agencies and colleges instructing returned war veterans on opportunities and problems in starting their own business enterprises, this series of articles deals particularly with the nursery field and has been prepared by a man with broad lifetime experience in this industry. The various methods of sales operation will be treated in separate articles, to point out the essentials of each form of business.

While directed primarily to the returned veterans seeking to establish themselves in this business, the articles will be available to others of limited experience. Reprints will be made available for distribution to your sons or employees in service, or to others who might benefit. Just send names and addresses if you wish the articles mailed direct as they appear, or write the editor the number of reprints you would like for your own use. There is no charge—this service is contributed by the magazine in the veterans' behalf.

potential business for the nursery industry.

2. Living memorials are an idea growing out of World War II. Following World War I thousands of war memorials were erected. Many of these were hastily planned, poorly constructed and wholly inappropriate. One large city built a huge masonry monstrosity at great cost and felt very proud of it until Gutzon Borglum, the late great sculptor, inquired pointedly, "What is it?"

Profiting by these experiences, those who are planning World War II memorials are thinking along different lines. They visualize memorials that are both useful and beautiful. Recreational parks meet these requirements and capture the popular imagination. Many communities already have such parks planned as war memorials and the movement is gaining headway rapidly.

3. The federal and state governments are planning a vast expansion of our highway system. A national roadside beautification program was well under way before the war and this undoubtedly will be resumed on a larger scale. Cross-continental superhighways are being planned with the trafficways widely separated and screened from each other for maximum safety. Enormous quantities of

nursery stock will be required for such plantings.

4. A comparatively new market for nursery stock will be found in industrial landscaping. Instead of permitting grounds to grow up to weeds or look like junk yards, the factory of the future will be made as attractive as possible both inside and out. The worker is happier and more efficient in pleasant surroundings.

Railroads, facing stern competition from the air lines, may decide to surround their stations with beautiful gardens and to landscape long strips of their right of way. A great deal of work on the part of nurserymen may be necessary to develop these markets, but they have definite possibilities.

5. Most important of all, perhaps, is the fact that the United States is coming of age. The older the country, the greater its appreciation of beauty. When a land is new the people's energies are spent in the development of its resources or just trying to make a living. With the coming of leisure and wealth, man tries to surround himself with luxury and beauty. The eastern seaboard of this country, for example, is a better market for ornamental nursery stock than the newer sections. Tastes and appreciation have been developed to a higher degree. Now that the land frontiers have disappeared and communities are growing older, homeowners yearn for pleasanter surroundings.

Many who formerly had no interest in gardens discovered, through their victory garden activities, that working with growing things can be a fascinating hobby. Now that the radish and tomato have become less important, perhaps the hydrangea and columbine will take their places.

But we would be remiss if we did not tell you about some of the disadvantages of the business that are not immediately apparent to the outsider.

The nursery business is highly seasonal except in the south. There are only a few months in the year that its products can be planted. Sales can go on the year around, but deliveries are confined to the periods when the plants are dormant and the soil and weather conditions are favorable for planting. This means that income is irregular; so careful financing is necessary to carry on during the lean months. It is not practical to maintain large enough office

and field forces during the slack season to take care of the peak periods; therefore, during the rush season, when orders are being filled, everyone has to work long hours under pressure. Nerves get frayed and tempers short, and every nurseryman has wondered more than once if it is worth while.

This advantage of humps and hollows is one of the hardest to overcome. The best brains of the industry are trying to figure out how to level the humps and fill in the hollows to make the business more uniform the year around.

Like all other forms of agriculture, the nursery business is subject to the whims of the weather. Unseasonable weather may cut short the planting period or cause heavy losses of trees and shrubs already planted. Hail, snow, sleet, frost and floods may strike at the wrong time, to bring calamity to the nurseryman. Only a few of these risks can be insured. No amount of foresight or planning can circumvent these setbacks. If you don't think you can take them philosophically, then you had better think twice before becoming a nurseryman.

Don't expect to get rich quick in the nursery business or amass a big fortune. Few indeed are the instances where this has been done. A successful nurseryman can expect to make a good living, to maintain his family in comfort and to give his children a good education.

If these drawbacks don't overwhelm you and you still feel that you want to become a "brush peddler," why bless you, we welcome you to the fraternity and we will do all we can to help you make a success of your venture; therefore, we set forth here our very best carefully considered advice. May it guide you to a happy career.

THE SEASON AHEAD.

[Concluded from page 4.]

siderable backlog is on hand to carry them along.

The key to the probable situation in the nursery business is the short supply of stock. If help is available for the maintenance of home grounds and for landscape nurserymen to enlarge their crews, great quantities of trees and shrubs will be needed for renovating the home grounds of individuals of moderate income and the private estates of the wealthy, or those that are left of them. Ornamentals should take the limelight, replacing fruits and berry plants. Mail-order sales are not likely to be affected adversely to any considerable extent when several million homes will have their menfolks again avail-

able to help care for the premises. Retail nurserymen will find their local cash-and-carry business greatly increased when customers are able to motor out to make their selections.

Few nurserymen have anything like the stock of trees and shrubs on hand that they had before the war. Production is short, beyond question. So even an ordinary demand should move the stock available, and the excellent business that is certain to come sooner or later with increased home building warrants the forecast of a successful season ahead in the face of any minor setbacks which may occur in readjustment of the industrial machinery of the country.

JUTE STILL REQUIRED.

The use of jute rope as a substitute for Manila, sisal and henequen rope, the fibers of which remain in short supply, must be continued, the War Production Board reports.

WPB said that navy and war shipping administration requirements for



M. R. Cashman.

rope for the fourth quarter of 1945 exceed the anticipated rope production from domestic mills.

While army requirements since the victory over Japan have been substantially reduced, the requirements for Manila and sisal rope by the claimant agencies still remain extremely high, the board said.

Pointing to a continuing world shortage of Manila, sisal and henequen fiber because of the heavy rope demands for United States consumption and for cordage required in the liberated countries, WPB said that small shipments of Philippine abaca might ease the situation in this country.

Sisal production in the Dutch East Indies is still uncertain, and no information is available as to when supplies from this source can be made available for United States mills.

HEADS A. A. N. COMMITTEE ON PUBLIC RELATIONS.

Concluding two days' sessions spent in formulating a program for submission to the executive committee and for early action by the association, the public relations committee of the American Association of Nurserymen, which was appointed at the conclusion of the chapter delegates meeting in July, elected as its chairman M. R. Cashman. He is a former president of the A. A. N., a former Minnesota state senator and a hard-headed nurseryman of a lifetime experience. The committee met at Chicago August 27 and 28 with President A. H. Hill and Secretary R. P. White. The rapid progress of their deliberations was described as amazing, and their proposals are expected to be announced to the industry at an early date.

M. R. Cashman, born at Owatonna, Minn., has been in the nursery business there since 1898. The nursery known as the Cashman Nurseries, Inc., consists of 1,200 acres devoted to the growing of nursery stock and general farming.

Mr. Cashman was elected to the board of directors of the American Association of Nurserymen in 1918 and served on the board for ten years. He was elected president in 1922.

He served as chairman of a committee of three appointed by Secretary of Agriculture Wallace in 1922 to conduct a hearing on quarantine 37 at Washington, D. C. Mr. Cashman served as chairman of the committee and conducted the hearing. Twenty-five countries were represented and over 300 foreign delegates attended. The report of that hearing on quarantine 37 is a matter of record in Washington.

In 1908 Mr. Cashman organized the Northwest Retail Nurserymen's Association at Minneapolis. He was elected the first president and served in that office for seven years.

He has filled many offices and served on many local boards in Owatonna and served his district as state senator for eight years in the Minnesota senate.

At the present time he owns and operates the Cashman Greenhouses, consisting of eighteen houses each 200 feet long. The main production is roses. He also operates a flower store in Owatonna.

M. R. Cashman personally manages all the Cashman Nurseries' interests, devoted chiefly to retail distribution throughout Minnesota and surrounding states. He has four sons in the service and is the father of twelve children, all living.

Fertilizers' Action in the Soil

PART I

By L. C. Chadwick

Although the practice of fertilizing crop plants is shrouded in antiquity, the use of commercial fertilizers dates from 1669 and the realization of the necessity of applying nitrogen, phosphorus and potash to growing crops has been a development of the past 100 years.

Our knowledge of plant fertilization has increased greatly during the past century, but all of the problems are by no means solved. Exact plant response to applications of fertilizer are seldom duplicated. Two similar plants of the same species will respond differently. These variations are attributed to plant and soil differences. While this is undoubtedly correct, the commercial man, as well as the scientist, wants to know the why and how of these differences.

Plants must be supplied with sufficient quantities of the essential nutrient elements to develop properly. Soil and plant tissue tests have been developed to determine the available nutrients present and to indicate what fertilizer practices should be followed. Neither one of these analyses alone may give us the true picture, but together they not only tell us what is available within the soil but also what the condition is within the plant. It is not the purpose of this paper to discuss soil or plant tissue tests, but it should be emphasized that both are important and useful in the determination of plant requirements if the analyses are frequently and correctly determined and the case history of the plant or crop is known.

Fertilization and plant response cover two distinct periods, (1) the period from the time the fertilizer is applied to the soil until it is absorbed by the plant roots and (2) the period covering the movement of the essential elements within the plant and their influence upon plant growth. The statements made here will be confined to the first of these two periods. Certainly many of the variations in plant response to fertilizers can be attributed to soil conditions and changes occurring in the fertilizer material between its application and absorption. If we know the effect soil conditions have upon movement and availability of the essential elements we can apply the fertilizers more intelligently.

Mineral Take-up by Plants.

Before discussing the reaction of the various essential nutrients in the

soil it may be well to mention briefly the probable method of mineral uptake by plants and gross physical and chemical soil relations.

The supposition used to be current that the mineral nutrients, dissolved in soil moisture, moved for considerable distances through the soil to the absorbing surface of the root tip. Recent experiments show that this movement may be almost negligible. The continued intake of water by the plant necessitates the continuous extension of the absorbing roots to provide new contacts with unexhausted moisture films around the soil particles, and that actual root-soil contact is essential to the absorption of many plant nutrients. This means that the plant must have a well developed root system for maximum utilization of the plant nutrients and growth. The essential elements for rapid plant growth are taken up by the root hairs from the reservoir of available nutrients held on the surface of the finer soil particles in the soil solution film about these particles. To assure an adequate supply of the essential nutrients, the reservoir must be refilled occasionally by the application of fertilizers. The actual mechanism of transfer of the essential elements from the soil particle to the plant root is by base exchange. This base exchange can be explained by the fact that certain bases such as hydrogen, calcium, magnesium, potassium and sodium, all carrying positive charges, are attracted to the negatively charged soil particle. The absorption or replacing power of some of these bases is stronger than others. Thus, for example, hydrogen will replace calcium, and calcium will replace potassium. The interchange may be direct from the soil particle to the root or through the medium of the soil solution.

Composition of the Soil.

The chemical and physical composition of the soil have much to do with fertilization practices. Because of the minerals from which they were formed, soils show considerable variation in their chemical composition. Sandy soils are most often derived from minerals deficient in potash. Clay soils are derived from types high in feldspars, consequently potash, but are more likely to be deficient in phosphorus and calcium. In limestone soils, nitrogen is most often the first limiting element, because

such soils usually contain adequate quantities of calcium, phosphorus and potash. A realization of these differences may lead to some variations in the fertilizer program.

The physical condition of soils has to do with its texture and structure. Texture refers to the size of the particles such as sands, silts and clays. Structure refers to the arrangements of the particles. Sandy soils are open and porous, and because they do not naturally contain much fine or colloidal material, they do not absorb the plant nutrients readily. Leaching may account for considerable loss of nutrients from such soils. Nitrates, particularly, should be applied lightly and frequently to such soils. Clay soils, on the other hand, may readily absorb and hold considerable quantities of nitrogen, phosphorus and potash. Silts and loams may furnish an intermediate and more ideal condition.

The soil air-moisture relationships for good plant growth have been continually stressed. Proper aeration and ample moisture are absolutely essential for good plant growth. It is of little value to add fertilizers to soils wherein inadequate aeration or unfavorable moisture relations are responsible for poor root response. These conditions should be corrected before fertilizers are applied.

Carriers of Nitrogen.

Carriers of nitrogen are either inorganic or organic in nature.

Most common among the inorganic carriers are (1) sodium nitrate, (2) ammonium sulphate, (3) calcium nitrate, (4) ammonium nitrate, (5) cyanamide, (6) urea, (7) Ammophos, (8) potassium nitrate and (9) Nitrophoska. It is not possible to discuss here the nature and reaction in the soil of all of these carriers. Consequently, the discussion will be limited mainly to the two most common carriers, sodium nitrate and ammonium sulphate, with a few brief comments about the others.

Sodium nitrate has been in use longer than any other carrier of inorganic nitrogen, coming early from natural deposits in Chile. In recent years it has also been produced synthetically from ammonia and sodium carbonate and marketed under the brand name of Arcadian sodium nitrate. At least two types of the Chilean sodium nitrate are now found on the market. The old type is crystalline in nature and often

pinkish in color because of impurities; it takes up water readily and has a tendency to become lumpy. The new type is put on the market in pellet form, is white in color and maintains a better mechanical condition because of its low moisture content. Arcadian sodium nitrate is in the form of cube-like crystals with rounded edges. It has a low moisture content and maintains a good mechanical condition. The pellet form of Chilean sodium nitrate and the Arcadian sodium nitrate appear to be the most effective in causing plant response. They carry about sixteen per cent nitrogen.

The nitrogen in sodium nitrate is the most readily available form. As mentioned previously, nutrients are held on the soil particles by electrically active charges. Some nutrients are held tightly, others loosely, depending on the nature of the charge. Soil particles have been found to carry a negative charge. Since unlike charges attract and like charges repel, and some nutrients carry negative and some positive charges, some will be held to the particles much more closely than others. The nitrate ion carries a negative charge and consequently is held loosely to the soil particle. When nitrogen in the form of sodium nitrate is added to the soil, being held loosely on the soil particles, it is soluble in water and diffuses rapidly in the soil. It is readily available for plant absorption and can as readily be lost by leaching. Because of these characteristics, sodium nitrate should be applied when the plant roots are active. In sandy soils, applications should be light. Somewhat larger quantities can be applied to clay soils. Because of its mobility, sodium nitrate is the best carrier of nitrogen to apply as surface applications. It will be somewhat more effective in cool weather than during the heat of summer. Heavy application may cause root injury.

Other points regarding sodium nitrate that should be mentioned include (1) its influence on soil acidity and the effect of soil acidity on its availability, (2) its influence on the availability of other nutrient elements and (3) its influence on the physical condition of the soil.

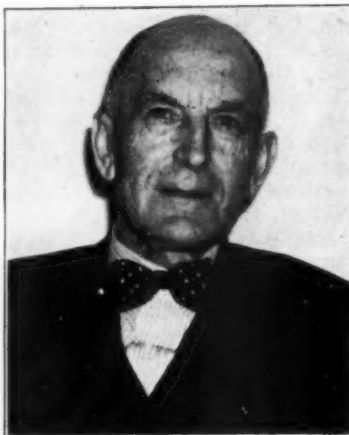
Sodium nitrate is basic and therefore tends to make the soil more alkaline. It is about two-thirds as effective in its neutralizing value as ground limestone. The nitrate ions from sodium nitrate are more readily available in highly acid soils (pH 4.0-5.0) than is the ammonium ion of ammonium sulphate. At low

[Continued on page 29.]

VETERANS OF OUR PROFESSION

WILLIAM C. PRICE.

The success which has attended the development of the Towson Nurseries, Towson, Md., by William C. Price, makes more surprising the proficiency he has shown in other fields as well. In his younger days his local fame as a baseball pitcher was such as to encourage the possibility of his becoming a professional player. An ardent fisherman and horseman, he matched or surpassed his record as a sportsman when he



William C. Price.

became a farmer. His interest continues in the number of blue ribbons he wins each year at the Timonium state fair. His Guernsey bulls and heifers have won many championships and race horses bred on his farm have won many honors. His inventive skill with mechanical devices has been of signal value in nursery operations.

The Towson Nurseries have grown from a plot of two and one-half acres, two workmen, a mule and a cart in 1918 to 600 acres of land, seasonal employment of nearly 300 men in normal times and a renown for fine plants and landscape work which has become widespread.

Born at Lutherville, William C. Price lost his mother at an early age and was reared by his grandparents, who operated a hotel in the county known as Eight Mile House. His interest there was in the flower beds, which he weeded and otherwise cared for. Later he was employed by W. D. Breckenridge and for twenty-one years by Isaac H. Moss, Govans, Md.

Towson Nurseries have become

known for their azaleas and rhododendrons. Boxwood, hollies and andromeda are other specialties, but the display gardens that have become famous show a wide range of trees, plants and bulbs. The business includes large landscape contracts and transplanting large trees, on the one hand, and the sale of popular gift plants and novelties in the Old Trail Shop.

Mr. and Mrs. Price, whose home is on the property adjacent to the nursery office, have one son, C. Warner Price, who is vice-president of the firm. He and his family live on the home farm at Cockeysville. Other officers of Towson Nurseries, Inc., are Mildred A. Clough, treasurer, and Paul S. Hofman, secretary. The firm is a member of the Maryland Nurserymen's Association and the American Association of Nurserymen.

Mr. Price is a director of the Timonium state fair, director of the Second National bank at Towson and president of the Court Building Association. In 1932 the University of Maryland awarded him a certificate as the outstanding horticulturist in the state.

TAXUS MEALY BUG.

The control of mealy bug on taxus is a problem, as no material gives 100 per cent control. Materials that give close to that control are Loro and Black Leaf 40, according to Paul Ulman, Indiana nursery inspector.

Inadequate control in some cases may be partly due to too low a spray pressure. High pressures are needed to penetrate the dense foliage on the taxus and the waxy covering on the mealy bug. A nozzle opening giving three to four gallons of spray a minute at 350 pounds' pressure is desirable.

He reports that Loro diluted 1 to 800, plus DuPont Spreader-Sticker diluted 1 to 1600, gave a kill of about ninety-eight per cent. Black Leaf 40, diluted 1 to 400, plus soap to make a 0.4 solution, gave an estimated kill of 99.5 per cent.

L. L. KUMLIEN, of the D. Hill Nursery Co., Dundee, Ill., went east with Mrs. Kumlien at the end of August to meet their son-in-law, Lieut. Carnot Larson, just returned from Europe. The latter is spending part of his 30-day leave at Dundee with his wife, the former Ellen Kumlien, after which he will go to Camp Jackson at Columbia, S. C. Mrs. Larson, for nearly three years in the Spars, stationed at Washington, D. C., expects to receive an early discharge and follow him.

More Unusual Trees and Shrubs

By *Gustaf E. Malmberg*

These notes cover more unusual plants growing at our Masonic Homes, in addition to the plants described in the article, "Unusual Ornamental Trees and Shrubs," in the American Nurseryman for July 1, 1944, in which I told of some of the 4,000 species and varieties of plants at the Masonic Homes, Elizabethtown, Pa. There is no duplication.

There are several species of abies I should mention. The first one is the Spanish fir, *Abies pinsapo*, and its form glauca. The best way to grow a good Spanish fir (now I have reference to the green one) is from seeds, because then you will have a shapely plant with a good top development. I have a few good specimens. But unfortunately when this fir is grafted, especially the blue form, it does not have a good top, but grows more or less in a bush form. This way it loses most of its natural beauty. This fir has short stiff and pointed needles, and if you do not look carefully, you may take it for a spruce. If well grown, it is a valuable tree and one that is not common.

Another good fir that makes a wonderful specimen for the large front lawn is *Abies homolepis*. Its needles are rather sharp and light green. Its shape is regular and makes it the finest Christmas tree of all if you really want to be fancy.

One that looks much like the preceding is *Abies holophylla*, a native of Korea. The species *homolepis* or, as it was often called, *brachyphylla*, comes from Japan. The only difference—and I do not even know this as a distinct difference—is that the branches on *holophylla* are not quite so stout and stiff as those of *homolepis*. Of course, if you want to go into real botanical differences, I think there may be some way to tell them apart, but that is more for the botanist than the practical nurseryman.

An evergreen of which I have always been fond is *Chamaecyparis lawsoniana* *Triomphe de Boskoop*. It is, as you all know, a false cypress and one of the most beautiful. On an estate in Sweden where my father was a gardener there were five of these trees fully mature and they were indeed a beautiful sight, the five specimens surrounding an outdoor living room. I had those plants in mind when I built the formal garden

at the Masonic Homes. There are eight of these trees in prominent places there. It is a strictly pyramidal tree of steel-blue color, and the round little cones that often hang on the trees all through winter are attractive, not at all disfiguring like those on the arborvitae.

Another false cypress related to the preceding species but of slower growth is *Chamaecyparis fraseri*. The growth of this cypress is upright just like that of the old allumi, but this plant is much better than allumi. The color is bluish-green. It seems much harder than many others, and it does not die out in spots as some of the other cypresses do.

If you should want a yellow variety for contrast, there is none better than *Chamaecyparis lawsoniana* *westermanni*. It has a deeper luster and better color than, for instance, *C. l. Cripps*, and it does not usually winterburn at the tips as that one does.

There are also a few dwarf varieties of cypress that may well be worth mentioning, and the best one in my estimation is *Chamaecyparis obtusa* *nana*. If you have the true

nana it grows extremely slow; it takes at least fifteen years to grow a plant two feet high. This variety is broad and irregular, like little mounds of green piled upon one another, but it is a true beauty. It is not by any means a plant to propagate by the thousands, but to have a hundred or so for the choice customers would be a good idea. There is a golden-yellow form of this, too.

Chamaecyparis squarrosa *nana* and *C. s. minima* are both good little plants, but they belong in the rock garden or in some other well protected place where they will not be lost. If you want to grow them in pots, there is one thing to remember—they resent overhead watering; so you have to be careful not to pour the water right on the plant. I learned that the hard way and lost all my first plants of this little gem.

A tree we really should not be able to grow at all as far north as we are, according to the federal bureau of plant introduction at Washington, D. C., is *Cunninghamia lanceolata*. This tree is really a forest tree, but if kept in shape it is an odd and interesting ornamental, too. It does



Chamaecyparis Lawsoniana.

not look at all like any other evergreen, except, maybe, *Araucaria bidwilli*. It is light green in summer, but takes on a good bronze color in the winter. It is one of the trees you cannot kill like most evergreens by cutting it down to the ground; it simply refuses to die and shoots up from the stump and makes as fine a tree the second time as was the first. Another fine thing about this conifer is that it starts to bear cones rather young, and even the cones are attractive. A few years ago I spent a whole day going through our stand of *Cunninghamias* to select the tree that had stood the winter with least injury; then I picked the seeds of this particular tree and raised a seed pan of plants which I sent to the experiment station at Glenn Dale, Md. Previously the staff had never been able to grow the *Cunninghamia* there. It is a fast-growing tree and needs a little more room than a cypress or an *arborvitae*.

From the state of Arizona we have a striking tree, the Arizona cypress, *Cupressus arizonica*. This is a true, and not a false, cypress. It is narrow and pyramidal and resembles the Italian cypress in shape, and it belongs, of course, to the same genus. It is steel-blue and grows rather fast. It has, however, a poor root system and should always be planted in a spot protected from strong winds. When it becomes a big plant it is extremely hard to transplant. *Cupressus arizonica* has proved entirely hardy with us and never has had a mulch or any other protection. The cones are much bigger than those on the *chamaecyparis*, often almost one inch in diameter, and they are useful as winter decorations.

A conifer we cannot pass by is *Cryptomeria japonica* with all its types and forms. The true species is not considered hardy, but we can grow it if we pick the spot for it. It is, however, too strong-growing, being a forest tree in its native Japan. The one that is more commonly grown is the variety *lobbi*, which is more moderate in growth, more compact and shapely and, by the way, much hardier. It is strictly pyramidal, not more than about five to six feet wide when the tree is thirty to thirty-five feet high. It is a beautiful tree when mature, and the male flowers are also quite attractive.

A *cryptomeria* with altogether different shape is the *Cryptomeria japonica dacrydioides*. Our specimen of this plant grows like a bush without a real top. This is because of the tree's branching habits. Each branch splits into ten to fifteen little

branches, almost like an umbrella. This variety, however, is not so useful as the preceding.

A little gem of a plant is *Cryptomeria japonica nana aurea*. It is a slower grower; I have had a specimen for about ten years, and it is still not more than a foot high. It is a plant that has its place in the rock garden and is nothing to propagate by the thousands, but it would not hurt any nurseryman to have a couple of dozen of this rare little gem. There is also a green form of this variety.

Another dwarf form much like the *nana* is *Bendai Howo Sugi*, a Japanese name, but I can assure you that the plant is much better than its name.

A tall-growing pyramidal plant that is not used so much as it deserves is *Libocedrus decurrens*. This conifer is dark green and looks almost like an *arborvitae*, but it is upright-growing; that is, all the branches strive upward, and the plant stays compact. It is a good tree where you want something tall and narrow. It grows to be 100 feet high, according to the book, but I have seen trees of this species fifty years old and not more than twenty to twenty-five feet tall. So I do not think we need to worry about that, but it is definitely not a tree to plant near a little bungalow-type house, but near a big structure like institutional buildings or hospitals it would be a fine tree. It is mostly propagated from seeds, which germinate readily.

We have a few pines that I think deserve attention. The first is the *Pinus bungeana*, the lacebark pine. The latter name comes from the white bark the tree has when mature. A missionary from China who visited me once said that the trees of this species looked more like our white birches than anything else. This pine is a three-needle pine and light green, almost yellowish-green. Bailey says that this tree often remains shrublike, but all my plants seem to form trees. It may be a little early for me to tell definitely what they will be like. Our plants are only about 10 to 12 years old. It is an interesting pine and one that is worth more attention than it is getting. As I understand it, it is one of the more common pines planted in northern China and is perfectly hardy.

Another pine that we do not plant enough is *Pinus edulis*, or more properly *Pinus cembroides edulis*. I have found that this pine is well suited for bank plantings. It will grow well on dry shaly banks. Its home is

in Wyoming or New Mexico, but it seems hardy with us, and it makes an attractive specimen. Usually it is a two to three-needle pine and bluish-green in color. When small this pine looks like a blue spruce with singly and closely set needles like those of a spruce.

The other pine that belongs to the same group is *Pinus cembroides monophylla*. As the name indicates, this pine has only one needle, but just the same it happens that it sometimes has two. Of the two *cembroides* pines I think I should prefer *edulis*, which by the way, is the nut pine or Mexican pinyon pine. The Indians collected the seeds of this pine and used them for food. They ground them up and made bread. The seeds are good either fresh or roasted, and they are about half as large as a hazelnut.

There is only one more pine I am going to mention, and that is a dwarf variety of *Pinus sylvestris*, namely *Waterer*. I remember this pine from my first year of college. I had to walk past two fine specimens of this tree every day, and when I got settled at the Masonic Homes I tried to get a plant of this variety for a long while before my efforts were crowned with success. It is dwarf, pyramidal and bluish-green, and it is a wonderful little tree, one well worth propagating in a limited way. It is not so slow-growing as, for instance, the dwarf variety of white pine or most of the dwarf spruces, but it is so dwarf that it will not outgrow its space in the scheme, as many fast-growing evergreens will.

Of all the hemlocks we have I shall mention only one, and that is the best of them all. I have often said if I could have only one evergreen in my garden it would be this one, the Sargent weeping hemlock, *Tsuga canadensis sargentii pendula*. I am sure all know it so well that any description is unnecessary. However, when you plant one of these, be sure to give it plenty of room, because if the ground is to its liking, it will grow to an immense size. I have seen this tree grow up to twelve to fourteen feet in diameter. As a specimen plant in the front yard or in the big rock garden or in front of a large bay window it is at its best. I am sure you could always sell this plant even in rather large quantities, and it would be a good idea to buy some two-year grafts for lining out.

Among unusual deciduous material, *Albizia julibrissin rosea* we can grow rather well in favored spots in Lancaster county. When you try

to germinate the seeds, especially if they are not strictly fresh seeds, try soaking them over night in water at 110 degrees, and if you cannot see any swelling in the seeds let them stay for another few hours until you notice at least a few seeds swelling. This tree, or maybe I should say shrub in our region, belongs to the pea family. Its flowers are arranged in globe-shaped clusters along the stems, and the leaves are like giant locust leaves. Used as a solitaire on a front lawn, it is something you will turn around to look at a second time. The color of the flowers is rose-pink, as the name indicates. The only protection I ever give these plants is a rather heavy mulch of strawy horse manure after the ground is lightly frozen.

A shrub of which I am fond is *Clerodendron trichotomum*, the glory bower. It belongs to the verberna family and comes from Japan. It is not completely hardy, but is so-called root-hardy. It grows up from the stumps every spring and flowers on new wood. Some years, after a mild winter, it survives well, and then you will, of course, have a better display of blooms. I have had this shrub about eight feet high, but then came a hard winter like the past one, and down it went to the ground. The leaves are more or less heart-shaped, and the flowers are white with a conspicuous red calyx in big flat panicles. The berries are not less attractive, being purple with the red calyx persisting. It makes a good showing, and it is a shrub that should be planted more often.

One of the earliest-blooming shrubs, if we do not include the witch hazels, is *Corylopsis pauciflora*. It is sometimes called winter hazel, but this is not such a good name, although the leaves are similar to those of the hazel bush. Of course, it belongs to the witch-hazel family. This little gem flowers before the leaves appear, with light yellow flowers in racemes about an inch long. It is a dandy little thing and much appreciated when it flowers in March.

Another shrub that belongs to the same family, hamamelis, the witch-hazel family, is *fothergilla*. Of this genus we have two species growing with us, *F. major* and *F. gardeni*, or as it is sometimes listed, *F. alnifolia*. They are both small-growing shrubs, although Bailey claims *major* grows to ten feet. The leaves look like those of the witch hazel, and the flowers are like miniature lamp brushes. It is the stamens that protrude and give the brushlike effect.



Corylopsis pauciflora.

They both came from Virginia and Georgia.

One of the wonders of the plant world, a graft hybrid of which there are few, is the *Laburnocytisus adami*. This unique plant is a hybrid between *Laburnum anagyroides* and *Cytisus purpureus*. The tree itself resembles the laburnum with perhaps smaller leaflets, but the flowers are yellow suffused with purple. Then all of a sudden you may have a branch with clear yellow blooms and again one with purple blooms like *Cytisus purpureus*. I remember this tree well from my early childhood, when I used to go to the botanic garden in my home town to look at this curiosity.

Of course, all know the ordinary *Laburnum anagyroides* and the far better *Laburnum alpinum*, as well as their hybrid, *L. watereri* or *vossi*.

A group of shrubs that is not planted enough is *sorbaria*. The *sorbarias* are big bold-growing shrubs,

sometimes called false spiraeas. The leaves are similar to those of *sorbus*, and that is the reason for the name *sorbaria*, like a *sorbus*. The flowers are borne in broad pyramidal panicles at the extreme end of the branches. They need a lot of room, as they grow up to eighteen feet tall and all quite broad because of the many suckers that usually surround the bush. They like a low spot where the ground is damp and rich, and they stand shade well. All the *sorbarias* are good; *aitchisoni* has a bluish foliage, *arborea* is one of the tallest-growing (there is a good variety of this called *glabrata*), *lindleyana* comes from the Himalayan mountains and *sorbifolia* is the smallest, growing only six to seven feet tall. The last-named comes from Asia. They all flower in July and August, with *sorbifolia* starting the show.

Another group of plants for which I always had a liking is the *stewartias*. They belong to the *ternstroemia* fam-

ily, that is, the tea family, and the camellia belong to this family, too. The stewartias are trees, or perhaps in our climate we had better consider them large shrubs even if they are treelike in some instances. The flowers on all of them are white, are more or less cup-shaped and appear in July and August at the time when there are few shrubs in bloom. They are spaced singly in the leaf axils, and so there is never quite the show as with the spiraeas or the cydonias. You have to look a little more closely at the plant to appreciate its beauty, but it is a fine thing and one usually overlooked in the making of the shrub border.

The one stewartia that is native to Kentucky and Georgia is pentagyna or, as it is now named, *Stewartia ovata*, with its form *grandiflora*, with lavender stamens; the species has yellow stamens. Then we have one from Korea, *Stewartia koreana*; one from Japan that is a most desirable plant, *Stewartia pseudocamellia*, and one from China, *S. sinensis*, also a good and free-blooming kind. There is still one more, *Stewartia serrata*, a strong-growing species, but not so free-blooming as *sinensis*, but it may change its habits, too, after it stops growing so rapidly.

Styrax is another of those shrubs that is too little planted. The most common of the hardy *styrax* is without a doubt *japonica*. Its common name, snowbell, is appropriate because the flowers are white and long-stalked in a few-flowered raceme. It flowers on old wood, and the branches are absolutely covered with bloom. After the blooming period is over the seeds are not unattractive. The one-seeded fruit is covered with a leathery hull. Where we have these shrubs growing is a deep deposit of leaf mold, many of the seeds that drop germinate, and the ground is covered with seedlings. The fragrant snowbell is a tree about thirty feet in its limit. Its latin name is *Styrax obassia*. The leaves of this species are broadly oval, and the flowers are produced in long (10 to 12-inch) fragrant racemes. This tree is easily propagated from seeds. As a solitaire this tree is at its best. It is a shapely tree if it has room, and it would be a shame to crowd it in with shrubs or other trees.

I am going to mention only one more tree, and that happens to be one that starts with the last letter in the alphabet, *Zizyphus jujuba*. It is a fruit tree; so you may think it does not belong here, but it is a good ornamental tree, too, and that is why I wish to say a few words

about it. It belongs to the rhamnaceae family and has broadly oval leaves, mostly three-nerved and light green. The flowers are green and insignificant, but when the fruit is ripe it is really attractive and different from anything you ever tasted. I have three or four varieties of this interesting tree, and I have grafted some of the rare varieties with good results. The fruit varies a great deal. The biggest of our trees bears a dark brown oval fruit about three-quarters to one inch long. There are also trees with rounded flat fruits, more like an apple, but they are usually not so good as the smaller-fruited kinds.

NEW HEAD OF TENNESSEE DIVISION OF HORTICULTURE.

The appointment of Joseph C. McDaniel as head of the Tennessee state division of horticulture is announced by the state commissioner of agriculture, O. E. Van Cleave. He succeeds A. N. Pratt, who recently resigned to accept a position with the American Fruit Growers Co.

The new horticulturist brings to his work a wide acquaintance with orchards south and north. He is a partner in the Penn-Orr-McDaniel Orchards, peach growers, at Danville, Ala. Since graduating from Alabama Polytechnic Institute, Mr. McDaniel has done graduate work at the University of Tennessee, Ohio State University and Michigan State College, with additional work part of the time in forestry and botany. For a short time he was associated with the research on apple bud sports at the Michigan experimental substation near Grand Rapids. Nearly five years, 1935-40, were spent in Tennessee with the TVA, when he

conducted experimental work in the selection, breeding and propagation of black walnuts, blight-resistant chestnuts and native fruits. He originated, while there, a method of grafting and growing honey locust trees without thorns, even from parent trees that were quite thorny but otherwise desirable.

Following that, with the Soil Conservation Service of the United States Department of Agriculture, he spent three years in Florida, with the Sand Hill citrus demonstration project in Polk county and in soil conservation districts at Monticello and Tallahassee, where he assisted many of the nurserymen and nut growers of that area in planning conservation systems on their farms. He continued his interest in tree breeding, and with the cooperation of Miller Nurseries and P. M. Mash, at Monticello, produced new hybrid types of hollies from crosses of selected American varieties (*Ilex opaca* and *I. cassine* x *I. opaca*) with English (*I. aquifolium*) and Chinese hollies (*I. cornuta*).

A seedless bud sport which he selected from the Valencia, Florida's leading orange, promises to be a valuable improvement of that popular variety. He selected several varieties of *Magnolia grandiflora*, one of which, under favorable conditions in the southeast, produces flowers from April until October.

A little over a year ago, Mr. McDaniel returned to Tennessee, engaging in work with soil conservation districts at Brownsville and Ashland City, which he now leaves to serve the fruit growers of Tennessee.

C. B. LINK TO BROOKLYN.

Dr. Conrad B. Link has been appointed to the position of horticulturist at the Brooklyn Botanic Garden, Brooklyn, N. Y., effective September 1, 1945. Dr. Link goes to the garden from Pennsylvania State College, where he has been assistant professor of floriculture. Upon graduating from Ohio State University, he was associated with the Good & Reese Co., Springfield, O., later returning to Ohio State University as research assistant. Since 1938 he has been a member of the department of horticulture at Pennsylvania State College. During a year's leave of absence he did extension work with florists in Ohio and completed his doctor's degree. He has also spent fifteen months in the army.

ON his release from the army Capt. L. A. Goding, Downers Grove, Ill., hopes to re-establish his nursery with hardy plants and evergreens.



Joseph C. McDaniel.

Teaching Nursery Practice in College

Dr. E. I. Wilde, professor of ornamental horticulture at Pennsylvania State College, State College, Pa., presented the part colleges have in training young nurserymen in his talk on "Teaching Nursery Practice in Institutions of College Grade," at the summer meeting of the Pennsylvania Nurserymen's Association, August 7 and 8, at York.

A student completing four years of college work receives a diploma, but this carries no guarantee for success in leadership or in business. However, the courses should lay the foundation for successful and cultural living. A student has secured facts which, with practical experience, should enable him to go forward.

At the Pennsylvania State College a boy gets a broad education. It is felt that a college education should broaden the outlook, and although a certain amount of specialization is allowed, no attempt is made to equip him for any specific job. This broad training in fundamentals allows the future employer to mold his men to fit his particular organization.

It must be remembered that a college is not an apprentice or vocational school, where emphasis is placed on the practical phases of how to do certain operations. Instead, the chief emphasis is on facts and fundamentals, on reasons why certain practices are followed. For example, anyone of average ability can be taught how to make cuttings and with practice become proficient at it. However, he may never know from which tissue roots originate or understand the effect of foliage on the rooting. The college seeks to give the answers to such questions. It is not claimed that such knowledge of scientific facts will mean more money, but it does give personal satisfaction and does enable one to diagnose possible troubles.

An analysis of the curriculum in ornamental horticulture at the Pennsylvania State College will show almost forty per cent of the credits required for graduation are fundamental science courses. There are twenty-two credits of chemistry, including inorganic, organic, general agricultural and plant chemistry. This may look like a lot of chemistry, but it is felt that properly to understand the processes of plant growth, the effect of fertilizers on soils and plants and the action of various insecticides and fungicides, a thorough knowledge of this subject is essential. Former students are con-

stantly verifying this. There are twenty-one credits of botany, which include general botany, classification of plants, diseases of ornamental plants, plant physiology and genetics. Here again it is felt that a person dealing with plants should be well trained in the fundamentals of plant structure and physiology. Six credits of entomology and insect control on ornamentals are given, four of bacteriology and three of geology.

Approximately twenty per cent of the credits required are in English and the humanities. The English takes up composition, argumentation, speech and literature. The humanities cover economics, political science and American history. A college graduate, regardless of his specialization, should be able to express himself intelligently both in speaking and in writing and should have some appreciation of the treasures in literature.

The other forty per cent of credits is in applied science; that is, subjects directly related to the field of horticulture. Some of these courses are required, as plant propagation, vegetable crops, general farm equipment, fruit crops, soils and soil fertility, soil conservation and plant breeding. In addition, specialization courses may be elected. These include plant materials, home grounds, nursery principles and practices, planting design, turf grasses, farm tractors, flower crops—annual and perennial—maintenance and estimating cost of construction and planting. Other valuable courses also may be elected, such as advertising and salesmanship, business letter writing, marketing and merchandising, accounting and retailing.

It is thus apparent that a college graduate has not had sufficient practical experience to take charge and manage a large nursery immediately upon graduation. Undoubtedly all colleges are weak in giving practical training. In order to overcome this deficiency, all students must before graduation have a full season of employment at a commercial concern where they will receive the needed practical experience.

A 2-year course in ornamental horticulture is offered, which is designed for students who do not want or are unable to spend four years in college and who desire more specialized training. For successful completion a certificate is given, but the course does not earn credit for a diploma. Some courses in the basic sciences are given, but the emphasis

is on the applied field of specialization. Only about seventeen per cent of the required credits is in fundamental science and includes a course in agricultural chemistry, one in general botany and one in plant diseases. It also has about fourteen per cent of the credits in English and the humanities, with courses in composition, sociology and economics. The remainder are in applied science, where plant propagation, plant materials, nursery practice, annuals and perennials, home grounds, soils and soil fertility, farm management and accounting, farm tractors, advertising and salesmanship and retailing may be taken. The 2-year student thus receives almost the same courses in ornamental horticulture and related applied science as the 4-year student, but he does not receive the broad fundamental training which more clearly explains plant development and growth processes.

Undoubtedly improvements can be made in these courses better to meet the needs of the industry, and any suggestions will be carefully considered. It must be borne in mind, however, that a college is not a place where a man is prepared for a specific place or job, but rather it is a place to receive the fundamentals necessary to fit into any one of several places.

Discussion on "How Can the Nurseryman Assist with This Program?" was led by J. Franklin Styer, who is chairman of the State College committee. He stated there were relatively few colleges giving courses in nursery practices, and these afforded an opportunity for sons of nurserymen as well as other young men who wished to enter the industry. The courses as outlined would take care of two types of men. Those taking the 4-year course would usually be the ones who might eventually become a member of the firm, while those taking the 2-year course would more likely become nursery foremen.

The industry should insist these courses be given and should assist in every possible way. Specifically, the association needs to cooperate with the college, but also needs to use the students. Members should assist with the practical training by hiring the students for a full season and should see they become acquainted with all phases of nursery work. This should be advantageous for both the students and the nurserymen, for it gives an opportunity of sizing up the men for possible future permanent jobs.

WHOLESALE PRICE LIST

FALL 1945

Established 1887
by J. H. H. Boyd

Our 58th Year

FOREST NURSERY CO. McMINNVILLE, TENNESSEE

J. R. Boyd, President

Telephone 234W

In presenting you with our regular Fall Wholesale Trade List for this season, we wish to thank our customers and friends for the liberal patronage given us in the past, and we hope to have the pleasure of serving you more in the future.

TERMS AND CONDITIONS: Three (3) per cent discount and free boxing and packing for cash with order. Free packing does not apply to balled and burlapped items. Open Accounts (on known or approved credit rating), two (2) per cent ten days; one (1) per cent twenty days; net, thirty days from date of shipment. Interest at six (6) per cent charged on all past-due accounts.

Orders for less than ten of a variety or grade will be invoiced at an ADVANCE OF 25% OVER THE TEN RATE REGARDLESS OF THE SIZE OF THE ORDER, except in Conifers and Broadleaf Evergreens where the "per each" and "per 10" rates apply.

Prices in this list are subject to market changes without notice and cancel all previous printed prices.

We charge for boxing and baling at cost of material used. When stock is loaded bulk in car or truck, no packing charge is made. Orders accepted subject to prior sale of stock or crop injury or loss from any cause beyond our control. We are careful to keep our varieties true to name as labeled, and we will replace on proper proof, any stock that may prove otherwise, free of charge, or refund the amount paid us, but it is mutually agreed that we shall not be liable for any amount greater than the purchase price paid us. NO CLAIMS WILL BE CONSIDERED UNLESS MADE IN WRITING WITHIN TEN DAYS AFTER RECEIPT OF GOODS.

SHIPPING—We request our customers to give definite shipping instructions regarding manner in which they wish goods shipped. In the absence of special instructions, we use our best judgment, but without assuming responsibility. All shipments travel at risk and expense of purchaser. All shipments will be accompanied by State Certificate of Inspection.

TRUCK SERVICE—We are in a position to make deliveries with our own truck and also have access to some local delivery trucks for hire and can make delivery unless prevented by Federal or State regulation laws or gas rationing.

If interested in a truckload delivery, write us and we will try to make arrangements.

LOCATION—McMinnville is located in Middle Tennessee on N. C. & St. L. railroad, 72 miles East of Nashville, 130 miles West of Knoxville on U. S. Highway No. 70S (the Broadway of America), 80 miles Northwest of Chattanooga on State Highways Nos. 55 and 56 and 100 miles Northeast of Huntsville, Alabama.

REFERENCE—Any bank or business house in McMinnville, the commercial agencies or any of the leading nurserymen in the United States.

We will be glad to send samples for approval on any items on orders booked. Due to labor shortage and the extra cost of material and time, we will not send samples until we have an order for the stock, subject to approval of sample, which will be sent free on Shrubs and Trees except for transportation charges. B & B Evergreens will be charged for at the regular prices on the order.

(SEND WANT LIST FOR SPECIAL QUOTATIONS ON QUANTITY LOTS)

HARDY DECIDUOUS FLOWERING SHRUBS

S.—Seedlings; C.—Rooted Cuttings; Tr.—Transplanted; Br.—Branched; L.O.—Lining Out; Div.—Divisions.

ACANTHOPANAX PENTAPHYLLUM. Five Leaf Aralia.

	Per 10	100	1000
6 to 12 inch, L.O.	\$0.40	\$ 3.50	....
12 to 18 inch, L.O. ....	.50	4.50	....
18 to 24 in., tr., well br. ..	1.50	12.00	....
2 to 3 ft., tr., well br.	2.00	15.00	....
3 to 4 ft., tr., well br.	3.00	25.00	....

ALMOND, PRUNUS GLANDULOSA. Double Pink-flowering Almond, own root.

12 to 18 in., tr., well br. ..	\$2.00	\$15.00	....
18 to 24 in., tr., well br. ..	2.50	20.00	....
2 to 3 ft., tr., well br.	3.00	25.00	....

ALTHAEA, HIBISCUS SYRIACUS.

Shrub Althaea. Varieties:

AMPLISSIMUS, Double Red.

ARDENS, Double Violet.

BOULE DE FEU, Double Red.

6 to 12 inch, c.	\$0.40	\$ 3.00	\$25.00
12 to 18 inch, c. ....	.50	3.50	30.00
18 to 24 inch, c. ....	.60	4.00	35.00
12 to 18 inch, tr. ....	.75	6.00	50.00
18 to 24 inch, tr.	1.25	10.00	80.00
2 to 3 feet, tr.	1.50	12.00	100.00
3 to 4 feet, tr.	2.00	15.00	....

Varieties:

Jeanne d'Arc—Double White.

Pulcherrimus—Double Pink.

12 to 18 inch, c.	\$0.50	\$ 3.50	....
18 to 24 inch, c. ....	.60	4.00	....

Variety:

Rosa. Seedlings. Single Flowers.

4 to 6 inch, s.	0.50	\$ 4.00	....
6 to 12 inch, s. ....	.50	7.00	....
12 to 18 inch, s.	1.25	10.00	....
18 to 24 inch, s.	1.50	12.00	....

ARONIA MELANOCARPA.

Black Chokeberry.

12 to 18 in., L.O., div.	\$0.20	\$ 1.25	\$10.00
18 to 24 in., L.O., div. ....	.25	1.50	12.00
2 to 3 ft., L.O., div. ....	.30	2.00	15.00

BENZON AESTIVALE, Spicebush.

6 to 12 inch, s.	\$0.30	\$ 2.50	\$20.00
12 to 18 inch, s. ....	.35	3.00	25.00
18 to 24 inch, s. ....	.40	3.50	30.00

CALICARPA AMERICANA.

American Beautyberry.

6 to 12 inch, s.	\$0.35	\$ 2.50	\$20.00
12 to 18 inch, s. ....	.40	3.00	25.00
18 to 24 inch, s. ....	.45	3.50	30.00

CALYCANTHUS FLORIDUS. Sweet Shrub.

	Per 10	100	1000
4 to 6 inch, s.	\$0.20	\$ 1.50	\$12.00
6 to 12 inch, s. ....	.30	2.50	20.00
12 to 18 inch, s. ....	.45	3.50	30.00
18 to 24 inch, s. ....	.55	4.50	40.00
2 to 3 feet, s. ....	.80	7.00	....

CARAGANA ARBORESCENS.

6 to 12 inch, s.	\$ 2.00	\$15.00	....
12 to 18 inch, s.	2.50	20.00	....

CEANOTHUS AMERICANUS.

Jersey Tea.

12 to 18 inch, tr.	\$1.25	\$10.00	....
18 to 24 inch, tr.	1.50	12.00	....

CEPHALANTHUS OCCIDENTALIS.

Buttonbush.

6 to 12 inch, c.	\$0.30	\$ 2.50	....
12 to 18 inch, c. ....	.40	3.00	....
18 to 24 inch, c. ....	.50	4.00	....
2 to 3 feet, c. ....	.60	5.00	....

CHIONANTHUS VIRGINICUS.

White Fringe Tree.

3 to 6 inch, s.	\$0.50	\$ 4.00	....
6 to 9 inch, s. ....	.70	6.00	....
9 to 12 inch, s.	1.00	8.00	....

CORNUS AMOMUM, Silky Dogwood.

6 to 12 inch, c.	\$0.30	\$ 2.00	\$15.00
12 to 18 inch, c. ....	.40	2.50	20.00
18 to 24 inch, c. ....	.50	3.00	25.00

CORNUS STOLONIFERA.

Red Osier Dogwood.

6 to 12 inch, s.	\$0.20	\$ 1.25	\$10.00
12 to 18 inch, s. ....	.30	2.00	15.00
18 to 24 inch, s. ....	.40	3.00	20.00
2 to 3 feet, s. ....	.50	4.00	25.00

CYDONIA JAPONICA. Japanese Quince.

	Per 10	100	1000
4 to 6 inch, s.	\$0.20	\$ 1.25	....
6 to 12 inch, s. ....	.25	2.00	....
12 to 18 inch, s. ....	.30	2.50	....

CYDONIA JAPONICA RUBRA.

Japanese Quince, True Upright Red.

Nonfruiting.

6 to 12 inch, c.	\$1.00	\$ 7.00	....
12 to 18 inch, c.	1.50	10.00	....
12 to 18 inch, tr.	2.00	15.00	....
18 to 24 inch, tr.	3.00	25.00	....
2 to 3 feet, tr.	4.00	30.00	....

CYTISUS SCOPARIUS, Scotch Broom.

6 to 12 inch, s.	\$0.60	\$ 5.00	....
12 to 18 inch, s. ....	.75	6.50	....
18 to 24 inch, s.	1.25	10.00	....
2 to 3 feet, s.	1.50	12.50	....

DEUTZIA SCABRA, Varieties:

Crenata—Double Pink.

Pride of Rochester—Double Rose.

6 to 12 inch, c.	\$0.35	\$ 2.50	....
12 to 18 inch, c. ....	.40	3.00	\$20.00
18 to 24 inch, c. ....	.50	4.00	25.00
12 to 18 in., well br. ....	.70	6.00	40.00
18 to 24 in., well br.	1.00	8.00	60.00

ELAEAGNUS ANGUSTIFOLIA.

Russian Olive.

Seedlings, L.O.	\$0.30	\$ 2.50	\$20.00
6 to 12 inch, s. ....	.40	3.50	30.00
12 to 18 inch, s. ....	.50	4.50	40.00

EUONYMUS AMERICANUS.

Brook Euonymus.

12 to 18 inch, div.	\$0.20	\$ 1.25	\$10.00
18 to 24 inch, div. ....	.25	1.50	12.00

FORSYTHIA FORTUNEL.

Fortune Forsythia.

FORSYTHIA INTERMEDIA.

Border Forsythia.

6 to 12 inch, c.	\$0.30	\$ 2.50	\$20.00
12 to 18 inch, c. ....	.35	3.00	25.00
18 to 24 inch, c. ....	.40	3.50	30.00
2 to 3 feet, c. ....	.60	5.00	40.00
12 to 18 in., well br. ....	.80	5.00	40.00
18 to 24 in., well br.	1.25	10.00	80.00
2 to 3 ft., well br.	1.50	12.00	100.00
3 to 4 ft., well br.	2.00	17.50	150.00

FORSYTHIA SPECTABILIS.

6 to 12 inch, 1-yr., c.	\$ 3.00	\$25.00	....
12 to 18 inch, 1-yr., c.	3.50	30.00	....

PEACH AND APPLE

We have a fairly good supply of Peach and Apple as follows:

Apple, 1-year Whips, 2 to 5 ft.

Peach, June Bud, 6 ins. up to 3 to 4 ft.

Assorted varieties and grades.

If interested, ask for surplus list.

FORSYTHIA VIRIDISSIMA.			
Per 10 100 1000			
6 to 12 inch, 1-yr., c.	\$ 2.50	\$20.00	
12 to 18 inch, 1-yr., c.	3.00	25.00	

HAMAMELIS VIRGINIANA.			
Witch Hazel.			
6 to 24 inch, s.	\$0.35	\$ 4.50	\$40.00
2 to 3 feet, s.	.65	5.50	50.00
2 to 3 feet, tr.	2.00	15.00	
3 to 4 feet, tr.	3.00	25.00	
4 to 5 feet, tr.	4.50	40.00	
5 to 6 feet, tr.	6.00	50.00	

HYDRANGEA ARBORESCENS.			
Native Hydrangea.			
6 to 12 inch, 1-yr.	\$0.20	\$ 1.25	\$10.00
12 to 18 inch, 1-yr.	.30	2.00	15.00
18 to 24 inch, 1-yr.	.35	2.50	20.00

HYDRANGEA PANICULATA GRANDIFLORA.			
PeeGee Hydrangea.			
6 to 12 inch, L.O.	\$ 6.00	\$50.00	
12 to 18 inch, well br.	\$2.00	15.00	
18 to 24 inch, well br.	2.50	20.00	
2 to 3 feet, well br.	3.00	25.00	

HYPERICUM PROLIFICUM.			
6 to 12 inch, s.	\$0.20	\$ 1.50	\$12.00
12 to 18 inch, s.	.30	2.00	15.00
12 to 18 in., s., well br.	.50	7.00	60.00
18 to 24 in., s., well br.	1.00	9.00	75.00
2 to 3 ft., s., well br.	1.25	10.00	90.00

LIGUSTRUM AMURENSE.			
Amur North Privet.			
6 to 15 inch, L.O.	\$0.30	\$ 2.50	\$20.00
6 to 9 inch, 2 br. up	.40	3.00	25.00
9 to 12 inch, 2 br. up	.45	4.00	35.00
12 to 18 inch, 2 br.	.60	5.00	45.00
12 to 18 inch, 3 br. up	.70	6.00	55.00
18 to 24 inch, 2 br. up	.70	6.00	55.00
18 to 24 inch, 3 br. up	.85	7.50	70.00
2 to 3 feet, 4 br. up	1.00	9.00	85.00

LIGUSTRUM IBOLIUM.			
Ibodium Privet.			
6 to 15 in., L.O.	\$0.30	\$ 2.50	\$20.00
6 to 9 in., 2 br. up	.40	3.00	25.00
9 to 12 in., 2 br. up	.45	4.00	35.00
12 to 18 in., 2 br. up	.60	5.00	45.00
12 to 18 in., 3 br. up	.70	6.00	55.00

LIGUSTRUM OBTUSIFOLIUM.			
Ibota Privet.			
6 to 12 in., s.	\$0.20	\$ 1.25	\$10.00
12 to 18 in., s.	.25	2.00	15.00
18 to 24 in., s.	.35	2.50	20.00
6 to 12 in., 2 br. up, c.	.35	2.50	20.00
12 to 18 in., 2 br. c.	.45	3.50	30.00
12 to 18 in., 3 br. up	.55	4.50	40.00
18 to 24 in., 2 br.	.55	4.50	40.00
18 to 24 in., 3 br. up	.65	5.50	50.00
2 to 3 ft., 4 br. up	.75	6.50	

LIGUSTRUM OVALIFOLIUM.			
California Privet.			
6 to 15 in., L.O.	\$0.25	\$ 1.75	\$15.00
6 to 12 in., 2 br. up	.35	2.50	20.00
12 to 18 in., 2 br.	.45	4.00	30.00
12 to 18 in., 3 br. up	.55	5.00	40.00
18 to 24 in., 2 br.	.55	5.00	40.00
18 to 24 in., 3 br. up	.70	6.00	50.00
2 to 3 ft., 4 br. up	.80	7.00	60.00

LIGUSTRUM SINENSE.			
South Privet.			
6 to 6 in., s.	\$0.15	\$ 0.70	\$ 6.00
6 to 12 in., s.	.20	1.00	8.00
12 to 18 in., s.	.25	1.50	12.00
18 to 24 in., s.	.30	2.00	15.00
2 to 3 ft., s.	.40	3.00	25.00
12 to 18 in., 2-yr., br. c.	.40	3.50	30.00
18 to 24 in., 1-yr., br. c.	.50	4.50	40.00
12 to 18 in., tr., well br.	.50	4.50	40.00
18 to 24 in., tr., well br.	.60	5.00	45.00
2 to 3 ft., tr., well br.	.80	7.00	60.00
2 to 4 ft., tr., well br.	1.00	9.00	80.00

LONICERA BELLA ALBIDA.			
White Belle Honeysuckle.			
Lining Out	\$0.30	\$ 2.50	\$20.00
6 to 12 inch, c.	.40	3.00	25.00
12 to 18 inch, c.	.45	3.50	30.00
12 to 24 inch, c.	.50	4.00	35.00
12 to 18 inch, hedging	.60	5.00	45.00
18 to 24 inch, hedging	.80	7.00	60.00

LONICERA FRAGRANTISSIMA.			
Winter Honeysuckle.			
6 to 12 in., c.	\$0.40	\$ 3.00	\$25.00
12 to 18 in., c.	.45	3.50	30.00
18 to 24 in., c.	.50	4.00	35.00
12 to 18 in., c., 3 br. up	.70	6.00	
18 to 24 in., c., 3 br. up	.80	7.00	

LONICERA MORROW.			
Morrow's Honeysuckle.			
Lining Out	\$0.30	\$ 2.50	\$20.00
6 to 12 inch, c.	.40	3.00	25.00
12 to 18 inch, c.	.50	4.00	30.00
18 to 24 inch, c.	.60	5.00	40.00

LONICERA TATARICA.			
Tatarian Honeysuckle.			
Varieties of Tatarian:			
Alba—White.			
Rosa—Pink.			
Rubra—Red.			
Lining Out	\$0.30	\$ 2.50	\$20.00
6 to 12 inch, c.	.40	3.00	25.00
12 to 18 inch, c.	.50	4.00	30.00
18 to 24 inch, c.	.60	5.00	40.00

PHILADELPHUS CORONARIUS.			
Sweet Mock Orange.			
6 to 12 inch, 1-yr., c.	\$0.40	\$ 3.00	
12 to 18 inch, 1-yr., c.	.50	4.00	
18 to 24 inch, 1-yr., c.	.60	5.00	

RHUS CANADENSIS (Aromatica).			
Fragrant Sumac.			
6 to 12 inch, s.	\$0.30	\$ 2.50	\$20.00
12 to 18 inch, s.	.35	3.00	25.00
18 to 24 inch, tr.	1.50	12.50	
2 to 3 feet, tr.	2.00	15.00	
3 to 4 feet, tr.	2.50	20.00	
4 to 5 feet, tr.	3.00	25.00	

RHUS COPALLINA.			
Shining Sumac.			
6 to 12 inch, s.	\$ 0.70	\$ 6.00	
12 to 18 inch, s.	\$0.20	1.25	10.00
18 to 24 inch, s.	.25	1.50	12.00
2 to 3 feet, s.	.30	2.00	15.00

RHUS GLABRA.			
Smooth Sumac.			
6 to 12 inch, s.	\$ 1.00	\$ 8.00	
12 to 18 inch, s.	\$0.15	1.25	10.00
18 to 24 inch, s.	.20	1.50	12.00
2 to 3 feet, s.	.30	2.00	15.00
3 to 4 feet, s.	.45	3.50	30.00

ROBINIA HISPIDA.			
Rose Acacia.			
12 to 18 inch, L.O.	\$0.35	\$ 2.50	\$20.00
18 to 24 inch, L.O.	.40	3.00	25.00
2 to 3 feet, L.O.	.50	4.00	30.00

SPIRAEA ARGUTA.			
Garland Spiraea.			
12 to 18 in., hedging	\$0.70	\$ 6.00	
18 to 24 in., hedging	.90	7.00	
12 to 18 in., 2-yr., tr.	1.00	8.00	
18 to 24 in., 2-yr., tr.	1.25	10.00	
2 to 3 ft., 2-yr., tr.	1.50	12.00	

SPIRAEA BILLIARDI ALBA.			
White Spike Bloom.			
6 to 12 in., 1-yr., c.	\$0.40	\$ 3.00	\$25.00
12 to 18 in., 1-yr., c.	.50	4.00	30.00
18 to 24 in., 1-yr., c.	.60	4.50	40.00
12 to 18 in., 2-yr., well br.	.70	6.00	50.00
18 to 24 in., 2-yr., well br.	1.00	8.00	70.00
2 to 3 ft., 2-yr., well br.	1.25	10.00	80.00

SPIRAEA BILLIARDI ROSEA.			
Billiard Spiraea.			
6 to 12 inch, c.	\$0.35	\$ 3.00	
12 to 18 inch, c.	.40	3.50	

SPIRAEA CALLOSA ROSEA.			
Pink Fortune Spiraea.			
6 to 12 inch, s.	\$0.30	\$ 2.00	\$15.00
12 to 18 inch, s.	.35	2.50	20.00
18 to 24 inch, s.	.40	3.00	25.00

ACER DASYCARPUM.			
Silver Maple.			
6 to 12 inch, s.	\$ 1.00	\$ 8.00	
12 to 18 inch, s.	\$0.15	1.25	10.00
18 to 24 inch, s.	.20	1.50	12.50
2 to 3 feet, s.	.30	2.00	18.00

ACER NEGUNDO.			
Box Elder.			
6 to 12 inch, s.	\$0.25	\$ 1.25	
12 to 18 inch, s.	.35	2.00	

ACER RUBRUM.			
Scarlet Maple.			
6 to 12 inch, s.	\$0.30	\$ 2.00	\$15.00
12 to 18 inch, s.	.35	2.50	20.00
18 to 24 inch, s.	.45	3.00	25.00

ACER SACCHARUM.			
Sugar or Hard Maple.			
4 to 6 inch, s.	\$ 1.25	\$10.00	
12 to 18 inch, s.	.35	2.50	20.00

AESCULUS OCTANDRA.			
Yellow Buckeye.			
6 to 12 inch, s.	\$0.20	\$ 1.50	\$12.00
12 to 18 inch, s.	.30	2.00	15.00
18 to 24 inch, s.	.35	2.50	20.00
2 to 3 feet, s.	.50	3.50	30.00

AILANTHUS GLANDULOSA.			
Tree of Heaven.			
12 to 18 inch, s.	\$0.25	\$ 1.50	\$12.00
18 to 24 inch, s.	.30	2.00	15.00
2 to 3 feet, s.	.35	2.50	20.00

ALBIZZIA JULIBRISSIN.			
Mimosa Tree.			
6 to 12 inch, s.	\$0.50	\$ 4.00	
12 to 18 inch, s.	.75	5.00	
18 to 24 inch, s.	.85	6.00	
4 to 5 feet, tr.	5.00	45.00	
5 to 6 feet, tr.	7.00	60.00	
6 to 8 feet, tr.	10.00	90.00	
8 to 10 feet, tr.	12.50	100.00	

BETULA LENTA.			
Sweet Birch.			
12 to 18 inch, s.	\$0.35	\$ 2.50	\$20.00
18 to 24 inch, s.	.40	3.00	25.00
2 to 3 feet, s.	.50	4.00	35.00

BETULA NIGRA.			
River Birch.			
6 to 12 inch, s.	\$0.30	\$ 2.00	\$15.00
12 to 18 inch, s.	.35	2.50	20.00
18 to 24 inch, s.	.40	3.00	25.00
2 to 3 feet, s.	.50	4.00	35.00

SPIRAEA PRUNIFOLIA.			
Bridal Wreath.			
18 to 24 inch, tr.	\$2.50	\$20.00	
2 to 3 feet, tr.	3.00	25.00	
3 to 4 feet, tr.	3.50	30.00	

SPIRAEA THUNBERGI.			
Thunberg Spiraea.			
12 to 18 in., hedging	\$0.70	\$ 6.00	
18 to 24 in., hedging	.90	7.00	
12 to 18 in., 2-yr., tr.	1.00	8.00	
18 to 24 in., 2-yr., tr.	1.25	10.00	
2 to 3 ft., 2-yr., tr.	1.50	12.00	

SPIRAEA VANHOUTTEI.			
L.O., field-grown			
6 to 12 in., c.	.....	\$0.35	\$ 2.50 \$20.00
12 to 18 in., c.	.....	.40	3.00 25.00
12 to 18 in., c.	.....	.50	4.00 35.00
9 to 12 in., hedging	.....	.50	4.00 35.00
12 to 18 in., hedging	.....	.65	5.50 50.00
18 to 24 in., hedging	.....	.75	6.50 60.00

SHADE TREES—Continued

FAGUS AMERICANA. American Beech.			
	Per 10	100	1000
4 to 6 inch, s.	\$ 1.00	\$ 8.00
6 to 12 inch, s.	\$0.25	1.25 10.00
12 to 18 inch, s.25	1.50 12.00
18 to 24 inch, s.30	2.00 15.00
2 to 3 feet, s.35	2.50 20.00

FRAXINUS AMERICANA. White Ash.

FRAXINUS LANCEOLATA. Green Ash.			
	Per 10	100	1000
6 to 12 inch, s.	\$ 0.60	\$ 5.00
12 to 18 inch, s.	\$0.15	1.00 8.00
18 to 24 inch, s.20	1.25 10.00
2 to 3 feet, s.25	1.50 12.00
3 to 4 feet, s.30	2.00 15.00
4 to 5 feet, s.	1.50	10.00
5 to 6 feet, tr.	2.00	15.00
4 to 5 feet, tr.	2.00	15.00
5 to 6 feet, tr.	2.50	20.00
6 to 8 feet, tr.	4.00	35.00

GINKGO BILOBA. Maidenhair Tree.

	Per 10	100	1000
4 to 6 inch, s.	\$0.55	\$ 4.50
6 to 9 inch, s.65	5.50
9 to 12 inch, s.75	6.50
12 to 18 inch, s.	1.25	10.00
18 to 24 inch, s.	2.00	15.00
2 to 3 feet, s.	3.00	25.00

GLEDITSIA TRIACANTHOS INERMIS.

Thornless Honey Locust.			
	Per 10	100	1000
6 to 12 inch, s.	\$ 1.50	\$10.00
12 to 18 inch, s.	\$0.30	2.00 15.00
18 to 24 inch, s.40	2.50 20.00

GYMNOCLADUS DIOICUS.

Kentucky Coffee Tree.			
	Per 10	100	1000
12 to 18 inch, s.	\$1.00	\$ 8.00
18 to 24 inch, s.	1.25	10.00
2 to 3 feet, tr.	2.00	15.00
3 to 4 feet, tr.	3.50	20.00
4 to 5 feet, tr.	7.50	60.00

HICORIA LACINIOSA. Shellbark Hickory.

HICORIA OVATA. Shagbark Hickory.			
	Per 10	100	1000
2 to 3 feet, s.	\$4.00	\$30.00
3 to 4 feet, s.	6.00	50.00
4 to 5 feet, s.	9.00	80.00

JUGLANS CINEREA. Butternut.

	Per 10	100	1000
6 to 12 inch, s.	\$0.35	\$ 2.50
12 to 18 inch, s.50	3.50
18 to 24 inch, s.60	5.00
2 to 3 feet, s.80	7.00

JUGLANS NIGRA. Black Walnut.

	Per 10	100	1000
6 to 12 inch, s.	\$0.35	\$ 2.50
12 to 18 inch, s.50	3.50 30.00
18 to 24 inch, s.60	5.00 40.00
2 to 3 feet, s.80	7.00 60.00
3 to 4 feet, s.	1.50	12.00

KOELREUTERIA PANICULATA.

Golden-Rain Tree.			
	Per 10	100	1000
6 to 12 inch, s.	\$0.70	\$ 6.00
12 to 18 inch, s.	1.00	8.00
18 to 24 inch, s.	3.00	25.00

LIRIODENDRON TULIPIFERA.

Tulip Tree.			
	Per 10	100	1000
4 to 6 inch, s.	\$ 1.00	\$ 7.00
6 to 12 inch, s.	\$0.20	1.25 10.00
12 to 18 inch, s.25	1.50 12.00
18 to 24 inch, s.30	2.00 15.00
2 to 3 feet, s.35	2.50 20.00
3 to 4 feet, s.50	4.00 35.00
4 to 5 feet, tr.	4.00	35.00
4 to 5 feet, tr.	6.00	50.00
5 to 6 feet, tr.	7.00	60.00
6 to 8 feet, tr.	10.00	75.00
8 to 10 feet, tr.	12.50	100.00

MACLURA POMIFERA. Osage Orange.

	Per 10	100	1000
6 to 12 inch, s.	\$ 1.00	\$ 7.50
12 to 18 inch, s.	1.25	10.00

MAGNOLIA TRIKETALA.

Umbrella Magnolia.			
	Per 10	100	1000
3 to 4 feet, tr. br.	\$3.50	\$30.00
4 to 5 feet, tr. br.	4.50	40.00
5 to 6 feet, tr. br.	5.50	50.00
6 to 8 feet, tr. br.	7.00	60.00

OXYDENDRUM ARBOREUM. Sourwood.

	Per 10	100	1000
6 to 12 inch, s.	\$0.20	\$ 1.25
12 to 18 inch, s.25	1.50 12.00
18 to 24 inch, s.30	2.00 15.00

PLATANUS OCCIDENTALIS.

American Plane Tree.			
	Per 10	100	1000
12 to 18 inch, s.	\$0.40	\$ 3.00
18 to 24 inch, s.50	4.00 30.00
2 to 3 feet, s.60	5.00 40.00

POPULUS NIGRA ITALICA.

Lombardy Poplar.			
	Per 10	100	1000
6 to 12 inch, c.	\$0.20	\$ 1.50
12 to 18 inch, c.30	2.00 17.50
18 to 24 inch, c.40	3.00 25.00
2 to 3 feet, c.50	3.50 30.00
3 to 4 feet, c.60	4.50 40.00
4 to 5 feet, c.70	6.00 50.00

PRUNUS AMERICANA.

American Plum.			
	Per 10	100	1000
3 to 4 feet, tr.	\$0.80	\$ 5.50
4 to 5 feet, tr.	1.00	8.00
5 to 6 feet, tr.	1.25	10.00

PRUNUS NEWPORT.

New Purpleleaf Plum.

PRUNUS PISSARDI. Purpleleaf Plum.			
	Per 10	100	1000
12 to 18 inch, June buds	\$2.50	\$20.00
18 to 24 inch, June buds	3.00	25.00
2 to 3 feet, June buds	3.50	30.00
3 to 4 feet, June buds	4.50	40.00

PRUNUS PERSICA RUBRA PLENA.

Dbl. Red-flowering Peach.			
	Per 10	100	1000
12 to 18 inch, June buds	\$2.00	\$15.00
18 to 24 inch, June buds	2.50	20.00
2 to 3 feet, June buds	3.00	25.00

PRUNUS SEROTINA. Wild Cherry.

	Per 10	100	1000
2 to 3 feet, s.	\$0.40	\$ 3.00
3 to 4 feet, s.50	4.00
4 to 5 feet, s.	1.00	8.00

PTELEA TRIFOLIATA. Hop Tree.

	Per 10	100	1000
4 to 6 inch, s.	\$0.40	\$ 3.00
6 to 12 inch, s.50	4.00
12 to 18 inch, s.60	5.00
2 to 3 feet, tr.	1.25	10.00
3 to 4 feet, tr.	2.00	15.00
4 to 5 feet, tr.	3.00	25.00

RHAMNUS CAROLINIANA.

Southern Buckthorn.			
	Per 10	100	1000
12 to 18 inch, s.	\$0.20	\$ 1.25
18 to 24 inch, s.25	1.50 12.00
2 to 3 feet, s.30	2.00 15.00

ROBINIA PSEUDOACACIA. Black Locust.

	Per 10	100	1000
6 to 12 inch, s.	\$ 0.75	\$ 6.00
12 to 18 inch, s.	\$0.15	1.00 8.00
18 to 24 inch, s.20	1.25 10.00
2 to 3 feet, s.25	1.50 12.00
3 to 4 feet, s.35	2.50 20.00
4 to 5 feet, s.	1.75	12.50 100.00
5 to 6 feet, s.	2.50	20.00 175.00
6 to 8 feet, s.	3.50	30.00 250.00

SALIX VITELLINA. Golden Willow.

	Per 10	100	1000
6 to 12 inch, c.	\$0.20	\$ 1.25
12 to 18 inch, c.30	2.00 15.00
18 to 24 inch, c.35	2.50 20.00

SASSAFRAS VARIFOLIUM.

Common Sassafras.			
	Per 10	100	1000
6 to 12 inch, s.	\$0.20	\$ 1.25
12 to 18 inch, s.30	2.00 15.00
18 to 24 inch, s.35	2.50 20.00
2 to 3 feet, s.40	3.00 25.00

TILIA AMERICANA. American Linden.

	Per 10	100	1000
3 to 4 feet, tr.	\$4.00	\$35.00
4 to 5 feet, tr.	5.00	45.00
5 to 6 feet, tr.	7.00	60.00
6 to 8 feet, tr.	10.00	80.00

ULMUS AMERICANA. American Elm.

	Per 10	100	1000
6 to 12 inch, s.	\$ 0.80	\$ 6.00
12 to 18 inch, s.	1.25	10.00
18 to 24 inch, s.	1.75	15.00
2 to 3 feet, s.	2.25	20.00
3 to 4 feet, tr.	\$3.50	\$30.00
4 to 5 feet, tr.	6.00	50.00
6 to 8 feet, tr.	6.50	60.00

ULMUS PUMILA. Chinese Elm.

	Per 10	100	1000
6 to 12 inch, s.	\$0.15	\$ 1.00
12 to 18 inch, s.20	1.25 10.00
18 to 24 inch, s.50	4.00 35.00
2 to 3 feet, s.70	6.00 50.00
3 to 4 feet, s.80	7.00 60.00
4 to 5 feet, tr.	5.00	35.00
6 to 8 feet, tr.	6.00	50.00

PEACH SEED

CALIFORNIA LOVELL, 1945 CROP.

Average approximately 4500 seed per bushel. This seed has been used in this section for the past three years and is preferred by most growers to the Tennessee natural seed. Terms: Cash With Order, or Net Ten Days from date of shipment.

	Per Bushel
1 to 5 Bu.	.....\$3.00
6 to 24 Bu.	.....2.85
24 to 99 Bu.	.....2.70
100 Bu. and up	.....2.50

Tennessee Natural Peach Seed.
(Six to Seven Thousand per bushel.)

	Per Bushel
1 to 5 Bu.	.....\$6.00
6 to 24 Bu.	.....6.40
25 to 99 Bu.	.....6.20
100 Bu. and up	.....6.00

VINES and CREEPERS

BIGNONIA CAPREOLATA. Cross Vine. Evergreen. Climbing to a height of 90 feet. Flowers in many clusters. Yellowish-red, lighter within tubular. Hardy as far north as Massachusetts. Very attractive.

	Per 10	100	1000
1-yr., No. 1, L.O.	\$0.40	\$ 3.00
1-yr., No. 2, L.O.35	2.50 20.00

BIGNONIA RADICANS. Trumpet Creeper. 6 to 12 inch, 1-yr., s.\$0.30 \$ 2.00 \$15.00
12 to 18 inch, 1-yr., s.40 3.00 25.00

CELASTRUS ORBICULATA.
6 to 12 inch, s.\$0.35 \$ 2.50 \$20.00
12 to 18 inch, s.40 3.00 25.00
18 to 24 inch, s.50 4.00 30.00

CELASTRUS SCANDENS.
American Bittersweet.
6 to 12 inch, s.\$0.35 \$ 2.50 \$20.00
12 to 18 inch, s.40 3.00 25.00
18 to 24 inch, s.50 4.00 30.00
12 to 18 inch, tr. br.70 6.00
18 to 24 inch, tr. br. 1.00 8.00
2 to 3 feet, tr. br. 1.25 10.00

LONICERA JAPONICA HALLIANA.
Hall Japanese Honeysuckle.
Small, lining-out \$ 0.90 \$ 7.00
Medium, lining-out 1.25 10.00
2-yr., tr. No. 1\$0.90 7.00 65.00
2-yr., tr. No. 270 6.00 55.00
1-yr., tr. No. 170 6.00 50.00

LONICERA SEMPERVIRENS.
Scarlet Trumpet Honeysuckle.
Small, lining-out\$0.35 \$ 2.50 \$20.00
Medium, lining-out40 3.00 25.00

LYCUM CHINESE. Matrimony Vine.
6 to 12 inch, L.O.\$0.40 \$ 3.50
12 to 18 inch, L.O.50 4.50

VINCA MINOR. Common Periwinkle.
Medium, lining-out, sm.\$0.15 \$ 1.00 \$ 7.00
Medium, lining-out20 1.25 10.00

VITIS AESTIVALIS. Summer Grape.
6 to 12 inch, s.\$0.35 \$ 2.50 \$20.00
12 to 18 inch, s.40 3.00 25.00
18 to 24 inch, s.50 4.00 30.00

VITIS CORNIFOLIA. Winter Grape.
6 to 12 inch, s.\$0.35 \$ 2.50 \$20.00
12 to 18 inch, s.40 3.00 25.00
18 to 24 inch, s.50 4.00 30.00

VITIS ROTUNDIFOLIA. Muscadine.
6 to 12 in., 2-yr., s., No. 3\$0.35 \$ 2.50 \$20.00
12 to 18 in., 2-yr., s., No. 240 3.00 25.00
12 to 18 in., 2-yr., br. 1.00 8.00

EVERGREENS—
CONIFERS

All stock offered is first-class, young, thrifty material and will please any customer. No old, overgrown stock offered. These prices include baling and burlap.

ARBORVITAE. Thuja.
—**OCCIDENTALIS GLOBOSA.**
Globe Arborvitae.

	Per Each	Per 10
12 to 15 inch	\$0.90 \$ 8.00
15 to 18 inch	1.00 9.00
18 to 24 inch	1.25 11.00

—**OCCIDENTALIS.**
American Arborvitae

ORIENTALIS BAKERI.

Baker Arborvitae (Blota).

	Per Each	Per 10
15 to 24 inch	\$1.00	\$ 8.00
18 to 24 inch	1.25	10.00
24 to 30 inch	1.50	12.50
3 to 4 feet	2.00	17.50
4 to 5 feet	2.50	20.00

ORIENTALIS BIOTA BONITA.

15 to 18 inch	\$1.25	\$10.00
18 to 24 inch	1.50	12.50
24 to 30 inch	1.75	15.00

ORIENTALIS COMPACTA.

Compact Arborvitae (Blota).

18 to 24 inch	\$1.25	\$10.00
24 to 30 inch	1.40	12.50
30 to 36 inch	1.75	15.00

ORIENTALIS EXCELSA. Blota Excelsa.

18 to 24 inch	\$0.90	\$ 7.50
24 to 30 inch	1.25	10.00
30 to 36 inch	1.50	12.50
3 to 4 feet	1.75	15.00
4 to 5 feet	2.00	17.50

CHAMAECYPARIS LAWSONIANA.

Lawson Cypress.

3 to 4 feet	\$1.50	\$12.50
4 to 5 feet	2.00	15.00

CHAMAECYPARIS LAWSONIANA.

ALLUMI. Blue Lawson Cypress.

18 to 24 inch	\$1.25	\$10.00
2 to 3 feet	1.50	12.50
3 to 4 feet	1.75	15.00

JUNIPERUS CHINENSIS COLUMNARIS.

Column Chinese Juniper.

18 to 24 inch	\$1.25	\$10.00
24 to 30 inch	1.50	12.50
30 to 36 inch	1.75	15.00
3 to 4 feet	2.00	17.50

JUNIPERUS CHINENSIS PFITZERIANA.

AUREA. Hill Golden Pfitzeriana.

15 to 18 inch	\$1.25	\$10.00
18 to 24 inch	1.50	12.50
24 to 30 inch	1.65	15.00

JUNIPERUS CHINENSIS PFITZERIANA.

Pfitzer Juniper.

15 to 18 inch	\$1.50	\$12.50
18 to 24 inch	1.75	15.00
24 to 30 inch	2.00	17.50
30 to 36 inch	2.50	22.50

JUNIPERUS COMMUNIS ASHFORDI.

Ashford Juniper.

18 to 24 inch	\$1.00	\$ 9.00
24 to 30 inch	1.25	10.00
30 to 36 inch	1.50	12.50
3 to 4 feet	2.00	17.50
4 to 5 feet	2.25	20.00

JUNIPERUS COMMUNIS CANADENSIS.

Vase-shaped. Silvery-green Foliage.

15 to 18 inch	\$0.75	\$ 6.00
18 to 24 inch	.90	7.50
24 to 30 inch	1.25	10.00
30 to 36 inch	1.50	12.50

JUNIPERUS COMMUNIS DEPRESSA.

PLUMOSA. Andorra Juniper.

15 to 18 inch	\$1.00	\$ 8.00
18 to 24 inch	1.25	10.00
24 to 30 inch	1.50	12.50
30 to 36 inch	1.65	14.00

JUNIPERUS COMMUNIS HIBERNICA.

Irish Juniper.

18 to 24 inch	\$1.00	\$ 8.00
24 to 30 inch	1.25	10.00
30 to 36 inch	1.50	12.00
3 to 4 feet	1.75	15.00
4 to 5 feet	2.25	20.00

JUNIPERUS COMMUNIS HIBERNICA.

FASTIGIATA. Columnar Irish Juniper.

18 to 24 inch	\$1.25	\$10.00
24 to 30 inch	1.50	12.00
30 to 36 inch	1.75	15.00
3 to 4 feet	2.00	17.50

JUNIPERUS EXCELSA STRICTA.

Spiny Greek Juniper.

12 to 15 inch	\$1.00	\$ 8.00
15 to 18 inch	1.25	10.00
18 to 24 inch	1.50	12.50
24 to 30 inch	2.00	15.00

JUNIPERUS SABINA. Savin Juniper.

15 to 18 inch	\$1.00	\$ 8.00
18 to 24 inch	1.25	10.00
24 to 30 inch	1.40	12.50

JUNIPERUS SABINA VONERON.

24 to 30 inch	\$1.50	\$12.50
30 to 36 inch	1.75	15.00

JUNIPERUS SUECICA. Swedish Juniper.

18 to 24 inch	\$1.00	\$ 8.00
2 to 3 feet	1.25	10.00

JUNIPERUS VIRGINIANA. Red Cedar.

3 to 4 feet	\$1.50	\$12.50
4 to 5 feet	2.00	17.50

JUNIPERUS VIRGINIANA BURKI.

Burk Juniper.

24 to 30 inch	\$1.75	\$15.00
30 to 36 inch	2.50	20.00
3 to 4 feet	3.00	25.00

JUNIPERUS VIRGINIANA CANAERTI.

Canaert Red Cedar.

	Per Each	Per 10
24 to 30 inch	\$1.75	\$15.00
30 to 36 inch	2.50	20.00
3 to 4 feet	3.00	25.00

JUNIPERUS VIRGINIANA GLAUCA.

Blue Cedar.

18 to 24 inch	\$1.50	\$12.50
24 to 30 inch	1.75	15.00
30 to 36 inch	2.50	20.00

JUNIPERUS VIRGINIANA GLOBOSA.

Globe Juniper.

15 to 18 inch	\$1.25	\$10.00
18 to 24 inch	1.50	12.50
24 to 30 inch	1.75	15.00

JUNIPERUS VIRGINIANA SMITHI.

Smith Red Cedar.

18 to 24 inch	\$1.25	\$10.00
24 to 30 inch	1.50	12.50
30 to 36 inch	1.75	15.00

PICEA CANADENSIS. White Spruce.

18 to 24 inch	\$1.25	\$10.00
24 to 30 inch	1.75	15.00
30 to 36 inch	2.00	17.50

PICEA CANADENSIS ALBERTIANA.

Black Hills Spruce.

15 to 18 inch	\$1.25	\$10.00
18 to 24 inch	1.50	12.50

PICEA EXCELSA. Norway Spruce.

18 to 24 inch	\$1.25	\$10.00
24 to 30 inch	1.75	15.00
30 to 36 inch	2.00	17.50

PINUS MUGO.

12 to 15 inch	\$2.00	\$17.50
15 to 18 inch	2.50	20.00

RETINOSPORA FILIFERA.

Thread Retinospora.

15 to 18 inch	\$0.75	\$ 6.00
18 to 24 inch	1.00	8.00
2 to 3 feet	1.25	10.00
3 to 4 feet	1.50	12.50

RETINOSPORA FISIFERA.

Blue Moss Squar.

18 to 24 inch	\$1.00	\$ 8.00
2 to 3 feet	1.25	10.00
3 to 4 feet	1.50	12.50

RETINOSPORA PLUMOSA.

Green Retinospora.

18 to 24 inch	\$1.00	\$ 8.00
2 to 3 feet	1.25	10.00
3 to 4 feet	1.50	12.50

RETINOSPORA PLUMOSA AUREA.

Golden Plume Retinospora.

18 to 24 inch	\$1.25	\$10.00
24 to 30 inch	1.50	12.50
30 to 36 inch	1.75	15.00
3 to 4 feet	2.00	17.50
4 to 5 feet	2.25	20.00

TSUGA CANADENSIS. Canadian Hemlock.

18 to 24 inch	\$1.50	\$12.50
24 to 30 inch	1.75	15.00
30 to 36 inch	2.00	17.50

(Sold only in connection with equal amount of other finished Evergreens.)

EVERGREENS— BROADLEAF

All items offered are nice, clean, thrifty stock in first-class condition. No old, overgrown stock offered. These prices include balling and burlapping except where noted.

ABELIA GRANDIFLORA.

	Per Each	10	100
4 to 8 inch, L.O.	\$0.75	\$ 7.50	\$ 75.00
8 to 12 inch, L.O.	.90	9.00	90.00
12 to 15 inch, L.O.	1.25	12.50	125.00

ABELIA GRANDIFLORA. Glossy Abelia.

2 to 3 feet, bare rt.	\$0.40	\$ 3.25	\$30.00
2 to 3 feet, B&B	.55	5.00	45.00
3 to 4 feet, bare rt.	.55	5.00	45.00
3 to 4 feet, B&B	.75	7.00	65.00

BUXUS SEMPERVIRENS. Common Bush

Form Boxwood. Compact, well filled.

10 to 12 inch, bare rt.	\$0.80	\$ 7.00	\$60.00
12 to 15 inch, bare rt.	1.25	10.00	100.00
12 to 15 inch, B&B	1.35	12.00	120.00
15 to 18 inch, B&B	1.75	16.00	160.00
18 to 24 inch, B&B	2.20	20.00	200.00

BUXUS SUFFRUTICOSA. Old English True

Dwarf Boxwood. Compact, well filled.

8 to 10 in., bare rt.	\$1.00	\$ 8.00	
10 to 12 in., bare rt.	1.25	10.00	
12 to 15 in., bare rt.	1.50	12.50	

(Cost of B&B to be added if wanted balled)

CEDRUS DEODARA.

2 to 3 feet	\$1.75	\$15.00	
3 to 4 feet	2.25	20.00	
4 to 5 feet	2.75	25.00	

EUONYMUS BUNGEANUS

(SIEBOLDIANUS).

12 to 18 inch	\$0.75	\$ 6.00	
18 to 24 inch	.85	7.00	
2 to 3 feet	.95	8.00	

EUONYMUS JAPONICA.

18 to 24 inch	\$0.85	\$ 7.50	
2 to 3 feet	1.25	10.00	

EUONYMUS PATENS.

Spreading Euonymus.

	Per Each	10	100
12 to 18 inch	\$0.75	\$ 6.00	
18 to 24 inch	.85	7.00	
2 to 3 feet	1.00	8.00	

EUONYMUS RADICANS CARRIERI.

Glossy Wintercreeper.

15 to 18 in., bare rt.	\$0.20	\$ 1.00	\$ 8.00
18 to 24 in., bare rt.	.30	2.00	15.00
2 to 3 ft., bare rt.	.50	4.00	30.00

ILEX OPACA. American Holly.

(Standard or Bush Form.)

3 to 4 feet	\$2.50	\$20.00	
4 to 5 feet	3.00	27.50	
5 to 6 feet	4.00	37.50	
6 to 8 feet	5.00	47.50	
8 to 10 feet	7.00	65.00	

ILEX VOMITORIA. Yaupon Holly.

2 to 3 feet	\$1.50	\$12.50	
3 to 4 feet	2.00	15.00	
4 to 5 feet	2.50	20.00	

LAUROCERASUS CAROLINIANA.

Cherry Laurel. (Nice, young stock.

Well filled, compact plants.)			
3 to 4 feet	\$1.15	\$10.00	
4 to 5 feet	1.50	12.50	
5 to 6 feet	1.75	15.00	
6 to 8 feet	2.25	20.00	

MAGNOLIA GRANDIFLORA.

Southern Magnolia.

2 to 3 feet	\$1.75	\$15.00	
3 to 4 feet	2.25	20.00	
4 to 5 feet	3.50	30.00	
5 to 6 feet	4.50	40.00	

MAHONIA AQUIFOLIUM.

Oregon Hollygrape.

15 to 18 inch	\$0.90	\$ 7.50	
18 to 24 inch	1.25	10.00	
24 to 30 inch	1.50	12.50	
30 to 36 inch	1.75	15.00	

NANDINA DOMESTICA.

12 to 18 inch	\$0.75	\$ 6.00	
18 to 24 inch	.90	7.50	
2 to 3 feet	1.00	9.00	
3 to 4 feet	1.25	11.00	

PYRACANTHA COCCINEA LALANDI.

Laland Firethorn.

18 to 24 inch	\$1.00	\$ 8.00	
2 to 3 feet	1.25	10.00	
3 to 4 feet	2.00	15.00	

UNDERSTOCKS

ACER DASYCARPUM. Silver Maple.

	Per 100	1000
Special, 1/4-inch up	\$2.00	\$15.00
No. 1, 3/16-inch up	1.50	12.50
No. 2, 2/16 to 3/16-inch	1.25	10.00

ACER SACCHARUM. Sugar Maple.

Special, 1/4-inch up	\$2.50	\$20.00
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Some Observations on Composites

By C. W. Wood

When summer has passed its zenith and is on the last stretch into autumn, the composites come into their own. That is especially true of the daisy type of composites, though they have been with us since the doricums commenced their performance in May. Many a spot in the garden would be lacking in color during part of that time if it were not for the composites, and many would also be more pleasing to the eye if these same composites had been chosen and placed with more care. And as we get into the round of composites and the daisy type gets more and more plentiful, the solution of the many problems they present becomes quite complicated. It is the purpose of these notes to examine some of these problems and to suggest solutions.

There is a sense of heaviness, even of coarseness, about many otherwise attractive composites of late summer and autumn. Some of the coarsest cannot be toned down even with the greatest care, and these (some of the sunflowers, for instance) must be relegated to the less frequently seen parts of the landscape, where we grow things for sentiment perhaps rather than for beauty and maybe for economic reasons alone. But there are a host of others which, though they possess sufficient beauty to render them invaluable for landscape use, must be used with care to keep them from becoming monotonous in their sameness. Plants of greatest value in that role are the ones with airy graceful foliage or inflorescence, or both.

Of the latter, the great sea lavender, *Statice latifolia*, is of great importance at the time the daisy type of composites comes on the scene in large numbers. Earlier baby's breath has been available to relieve the stiffness of composite plantings; now it has, with few exceptions, lost most of its beauty and has probably been cut back severely to give its place to others. If the great sea lavender has been chosen and has been given a fertile soil and time, especially time, to attain its full stature of beauty, gypsophila will not be greatly missed.

In addition to being a splendid ameliorating influence among stiff composites, *statice* has many other uses in the summer border, including that of a foil for lilies of its season. It has the disadvantage, of course, of being top-heavy, especially when treated liberally. That calls for stak-

ing if its immense heads are to be kept upright, as they should be in the well kept garden, but that does not detract from the plant's beauty, because staking in its case can be done without the hand of man showing in the result. Let me caution you not to expect the utmost from sea lavender until it has been left in one congenial spot for at least four years. And after that it will grow in grace and beauty for at least a score of years if fertility is kept up to par by top-dressing.

Another subject of great value at this time of year is the plant passing in gardens as *Thalictrum sulphureum*. I do not locate my notes on this plant at the moment, but if memory serves me well, it was said at the time of its introduction years ago that it was one of Lemoine's hybrids of unstated parentage. Be that as it may, the plant is a good thing to have in the summer (July and August) border, where its pretty *thalictrum* foliage and immense panicles of sulphur-yellow flowers on stems to five feet in height can cover a multitude of sins of commission as well as omission. As a matter of fact, any *thalictrum*, whether it blooms at this time or not, can be suspected of being useful for its foliage effects alone in the summer border. For instance, if you can do well with the Yunnan meadow rue, *T. dipterocarpum*, there is nothing better to relieve the heavy effects which are so often seen in borders at the time we are now considering.

The summer perennial phlox, *P. paniculata*, needs no recommendation from me; nor does it need any description, for it is known in some form to every gardener. But that does not imply that it is always used felicitously. The present is not the time to go into the subject thoroughly, as we are now concerned with the proper use of daisy-type com-

posites. Fortunately, the phloxes are not entirely without merit in that role. As the daisies are mostly of the yellow persuasion at this season, we must, however, use care when we are choosing phloxes for their companions. White is always good in these associations, and in Mary Louise we have a white of great value—the best white phlox for garden use, in fact, that has come my way to date. It was remarkably free from foliage defects while it grew here, and the extra-large flowers are of excellent shape and texture while being pure white. Blue is also good with yellow, but there are no blue phloxes that I know, notwithstanding what some catalogs say about variety Blue Boy. Even so, Blue Boy will approach blue if it is given some protection from bright sunshine, and it is then a good companion for the yellows of its season. The older Antonin Mercier in lilac-blue is also good in some yellow associations. The violet-blue Border Gem is another kind that I have found useful in this connection.

One specific planting noted last summer in a garden where I look for pleasant surprises will suggest other ways of using these ideas. In the rear of the border were a number of *Helianthus orgyalis* handled along the lines recommended years ago by Miss Jekyll. In front of the sunflower there were masses of earlier-flowering plantings, including some yarrows. As the latter went out of flower, the sunflowers had been trained down over them, the change of position or pulling down to hide the passing of their neighbors causing the sunflowers to break at nearly every leaf bract. In addition to making a very floriferous plant out of one that is sometimes accused of being a sparse bloomer, it made an attractive background for the plaintain lily, *Hosta plantaginea*. And in front of that came a planting

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KOSTER NURSERY, Bridgeton, N. J.

of Maid Marion phlox, whose soft lavender flowers made a pleasing foreground to a beautiful picture.

The plaintain lily mentioned deserves a few words of commendation, not only in the present role, but to anyone looking for a plant of a thousand charms in the August and September garden. That is, of course, the period of its greatest beauty, for it is then that it produces its long (to five inches), fragrant, frosted white tubes, but it has been comely since its large, ribbed, pale green leaves came last spring and will so remain until cut down by frost. Like the sea lavender, this is another plant that takes time to attain a stage of spectacular beauty. If one commences with a rich soil and maintains fertility by top-dressing, including leaf mold as well as commercial fertilizer, it will maintain the imposing height of two feet or more for years, provided, of course, that it receives plenty of moisture all during the growing season.

Two blue-flowered sages, *S. azurea* and *S. pitcheri*, are of inestimable value when one is trying to make the daisy type of composites more pleasing parts of the summer and autumn garden. That is not their only value, to be sure, for they possess in their blue flowers, sky-blue in the first and gentian-blue in the latter, virtues of no small degree for many roles in garden making. For instance, the sky-blue of *azurea* is a fine accompaniment for any magenta flower of its season (August and September). That is the reason one sees it often planted with *Liatris pycnostachya*, mullein pink and others of their persuasion. Unfortunately, this sage has the disconcerting habit of being flattened by every high wind or heavy rain unless it is held up by a more stalwart plant, such as rue.

It is unfortunate that many garden makers and even nurserymen who should know better are so prejudiced against stonecrops in general that they cannot, or refuse to, see the virtues of *Sedum spectabile* as a landscape plant. It is, like many stonecrops, so accommodating that it will make a good showing under the most adverse conditions, but it is at its best in good soil where it is assured some moisture during summer and autumn and, if given its choice, it would, I think, ask for light shade. But none of these conditions is absolutely necessary, because it will go merrily along its way, even in poor dry soil in boiling sunshine. The light pink flowers of the type, which are far better for landscape work than the harsh color of variety Brilliant, to my way of thinking, go well with pale yellow and white, as in a plant-

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SPRING
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	Per 100	Per 1000
Chionanthus virginicus. White Fringe Tree.		
18 to 24 inches.....	\$27.00	\$225.00
2 to 3 feet.....	32.50	275.00
3 to 4 feet.....	40.00	350.00
4 to 5 feet.....	55.00	.....
Cornus mas (mascula). Cornelian Cherry.		
2 to 3 feet.....	25.00	225.00
3 to 4 feet.....	32.50	275.00
4 to 5 feet.....	40.00	350.00
Deutzia lemoinei. Lemoine Deutzia.		
18 to 24 inches.....	27.50	.....
2 to 2½ feet.....	32.50	275.00
2½ to 3 feet.....	37.50	325.00
Euonymus alatus. Winged Euonymus.		
18 to 24 inches.....	35.00	325.00
2 to 3 feet.....	47.50	425.00
3 to 4 feet.....	60.00	525.00
Forsythia intermedia nana. Dwarf Border Forsythia.		
18 to 24 inches.....	20.00	.....
2 to 2½ feet.....	25.00	.....
2½ to 3 feet.....	30.00	.....
Ilex verticillata. Common Winterberry or Black Alder.		
18 to 24 inches.....	20.00	.....
2 to 3 feet.....	25.00	.....
3 to 4 feet.....	32.50	275.00
4 to 5 feet.....	40.00	.....
Kolkwitzia amabilis. Beauty-bush.		
2 to 3 feet.....	40.00	.....
3 to 4 feet.....	50.00	.....
Lonicera korolkowi floribunda. Broad Blueleaf Honeysuckle.		
2 to 3 feet.....	40.00	.....
Rhodotypos kerrioides (scandens). Black Jetbead.		
18 to 24 inches.....	25.00	225.00
2 to 3 feet.....	32.50

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Princeton, Illinois

ing I saw last year in which Gailardia Mr. Sherbrook toned down by a pale yellow calendula and a lemon-colored kniphofia and *Sedum spectabile* were placed before a bank of our tall native *Aster umbellatus*. May I suggest that you use this sedum

in your show garden, not planted singly or in twos or threes, as is so often done, but in wide spreads, with companions of pleasing association? If I am not badly mistaken, it would be the means of selling the plant in large numbers.

Incidentally, *Aster umbellatus* is not appreciated at its true worth in gardens. True, it cannot be compared with the large-flowered modern varieties of the New England and New York asters and it is not meant in that spirit when I recommend it for your consideration. Rather, it is for the discerning who are looking for something to help them use composites in pleasing pictures in the late summer and autumn garden. In its natural habitats in thickets throughout the eastern states it grows as much as eight feet tall, though it is usually not more than five or six. The white flowers are rather small, but are freely produced in compound flat corymbs through August and September.

Even gardeners who are enthusiastic about our native plants, of which I count myself, have to admit that our sunflowers are not easy to use in landscaped parts of the garden. One use of my favorite, *Helianthus orgyalis*, was mentioned previously. But that does not prescribe their possibilities by any means. You would be surprised, for instance, how *boltonia* planted among your sunflowers takes away some of the coarseness of these composites. *Boltonia* is another plant not fully appreciated by gardeners. Excepting the willowy *H. orgyalis*, the double-flowered forms of *H. multiflorus* are among the best of the sunflowers and, if one were really in love with them, he might subscribe to Mrs. Wilder's opinion that they "are among the best of hardy plants." One does not often see the old favorites Golden Ball and Soleil d'Or in nurseries at present, but they could no doubt be found in old gardens, if wanted. Their greatest value to me was their cutting qualities, though they were not without merit in certain associations in the landscape.

Boltonia, as mentioned before, is one good companion, and the native ironweed, *Vernonia noveboracensis*, or perhaps better yet the southwestern *V. crinita* (*arkansana*) is another. I just went over my catalog file and found only one of them listed either of these ironweeds. That is not as it should be, for the plants possess much merit in landscape work. I was pleased to find in an old catalog of a prominent nursery for the year 1931 the following comment on *V. noveboracensis*: "One of the noblest and showiest of our native flowers. A tough and rather coarse plant with beautiful heads of violet and purple blooms. Contrasts well with groups of *helianthus*." That tells no more than half the story. I find a reference to it in one of Mrs. Wilder's earlier books which more fully ex-

presses my attitude toward this worthy native: "For this last plant (*vernonia*) I am always pleased at the opportunity to say a good word, for though it is a wild plant, quite unimproved, and little used to cultivation, all its ways are seemly. Its roots are stay-at-homes, its growth splendidly upright, its color imperial and gracious. There is no finer plant of the late summer and early autumn for the back of the border. There with sprays of yellow sunflowers, in spite of our efforts, groups of bluish rue bushes and masses of late white phlox, it creates one of my favorite pictures."

I should like to say a few words in praise of another neglected native plant, the plant that we long knew as *Veronica virginica*, but which we are now told by the systematists should be called *Veronicastrum virginicum*. Be that as it may, the plant has merit as a landscape item in the August garden far beyond any use now made of it. Give it a deep fertile soil and plenty of moisture if you would see what I mean. It would then grow six or seven feet tall, with long spikes of gray-white that are a relief to the sameness of daisy-type composites of its season, for accent and for many associations in the summer perennial and shrub borders.

HIS COMPETITORS GIVE VETERAN A FRESH START.

William Hallicy, Clifton, N. J., energetic secretary and later vice-president of the North Jersey Nurserymen's Association before he went into service two years ago, returned home August 12 with an honorable discharge, preparing to raise chickens and turkeys because the stock in his nursery had been ruined by fire while he was away serving in the Seabees and his wife was working as a clerk at New York city.

He was awakened by the rumble of fifteen trucks loaded with \$2,500 worth of nursery stock as they drove up to his nursery, early Thursday, August 23. To his astonishment, fifteen of his competitors in the nursery business plowed up his 4-acre tract and prepared the soil for planting. Then they unloaded 900 small evergreens and other stock from the trucks, planting it in the rows. Much of the stock was of salable size.

When Bill Hallicy recovered from his amazement he provided the boys with some beer while they completed their community project. An account of the good deed appeared in the New York Herald Tribune of August 26. In it Charles Hess, president of the association, was quoted as saying: "We felt that a man who was

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	Per 100
<i>Adiantum pedatum</i> , Maidenhair Fern	\$ 2.50
<i>Aspidium clintonianum</i> , Clinton Wood Fern	5.00
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<i>Aspidium goldianum</i> , Goldie Fern	10.00
<i>Aspidium marginale</i> , Evergreen Wood Fern	3.00
<i>Aspidium noveboracense</i> , New York Fern	3.00
<i>Aspidium spinulosum</i> , Toothed Wood Fern	3.00
<i>Aspidium spinulosum dilatatum</i> , Mountain Wood Fern	10.00
<i>Aspidium thelypteris</i> , Marsh Fern	3.50
<i>Asplenium acrostichoides</i> , Silver Spleenwort	5.00
<i>Asplenium angustifolium</i> , Narrow Spleenwort	6.00
<i>Asplenium ilixifemina</i> , Lady Fern	3.00
<i>Asplenium platyneuron</i> , Ebony Spleenwort	3.00
<i>Asplenium trichomanes</i> , Maidenhair Spleenwort	3.00
<i>Camptosorus rhizophyllus</i> , Walkingleaf Fern	3.00
<i>Cystopteris bulbifera</i> , Bladder Fern	3.00
<i>Cystopteris fragilis</i> , Fragile Bladder Fern	5.00
<i>Dicksonia punctiloba</i> , Hay-scented Fern	3.00
<i>Onoclea sensibilis</i> , Sensitive Fern	3.00
<i>Onoclea struthiopteris</i> , Ostrich Fern	5.00
<i>Osmunda cinnamomea</i> , Cinnamon Fern	5.00
<i>Osmunda claytoniana</i> , Flowering Fern	5.00
<i>Osmunda regalis</i> , Royal Fern	5.00
<i>Phegopteris dryopteris</i> , Oak Fern	5.00
<i>Phegopteris hexagonoptera</i>	8.00
<i>Phegopteris polypodioides</i>	5.00
<i>Polypodium vulgare</i> , Common Polypody	3.00
<i>Polystichum acrostichoides</i> , Christmas Fern	3.00
<i>Polystichum braunii</i>	15.00
<i>Woodsia ilvensis</i> , Rusty Woodsia	5.00
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<i>Woodwardia virginica</i> , Chain Fern	10.00

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18 to 24 ins., \$40.00 per 100; 2 to 3 ft., \$60.00 per 100;

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good enough to sacrifice his business to fight the Japs deserved a new start. The men brought the best they had, although all have competing retail nurseries in near-by Hudson, Bergen and Passaic county communities."

About \$4,000 worth of nursery stock was destroyed in the brush fire that swept the nursery several months after Bill Hallicy entered the Seabees in February, 1942. He spent twenty-two months in the Pacific, participating in the building of airfields in the Solomon islands and at Okinawa. Now 42 years old, he will resume his local landscape trade, forgetting about the poultry.

The modesty of the North Jersey Nurserymen's Association members was such that no word for publication came from any one of them. But the news was forwarded by another New Jersey operator with the comment: "Can any other business point with pride to such generous action to help a fellow traveler on his way? It is grand to know you are in the same business."

An account of this event also appeared in the Passaic Herald-News August 24, with a picture of the nurserymen who delivered the stock, and an editorial appeared in the New York World Telegram August 28.

In consequence of this publicity, Bill Hallicy was invited to participate in the national radio program, "We the People," September 9.

Among those who participated in the gift of nursery stock to Bill Hallicy were Leon C. Christen, Clifton, who died suddenly a few days later, and the following: Harry Deverman, C. A. Kievit, Nelson Vreeland, Anker Pederson, Lloyd Bagnole, James Christopher, Russell Jacobus, William Flavelle, Charles Hess, Gerard Grootendorst, Martin Freese, Otto Bergman, Paul Hogerman, Engel Zegers, Martin Snell, Eric Johnston, Sam Blair, William Lefferts and Ben Pfitzerman.

L. C. (JENS) IHRKE has had temporarily to suspend his traveling for the D. Hill Nursery Co. because his bulk oil station at De Witt, Ia., was demolished by an explosion August 30. His brother and three others were killed and the three remaining employees were removed to a hospital.

FROM Horovice, Czechoslovakia, Charles Hribal, nurseryman, writes that with his family he has gone through the war without any great damage, despite the bombardment of his country. Some difficulties are arising, but he believes they can be overcome in a few years.

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Virginiana Glauca	1.85
Pyramids	1.65
Pyramids, 5 ft.	1.90
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Scotch Pine	1.00
Pfizers	1.85
Norway Spruce	1.50

2 to 3 feet.

Biota Aurea Nana	1.75
Woodward Globe	1.50
Mugho Pine	1.50
Hemlock	1.85
Taxus Hicksi	2.00
Meyeri	1.50
Juniper virginialis	1.50
Am. Arborvitae	1.50
Greek Junipers	1.50

Chinese Elms, 10 ft.	1.25
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Trade Meetings

MEETING CALENDAR.

For the benefit of state association officers who wish to set the time of midwinter meetings with the minimum of conflict, the following list is given of meeting dates already made known. Secretaries of other associations are invited to notify the editor of further meeting dates as they are set.

December 3 and 4, 1945, Minnesota State Nurserymen's Association, Hotel Lowry, St. Paul.

December 5 and 6, Wisconsin Nurserymen's Association, Hotel Schroeder, Milwaukee.

January 3 and 4, 1946, Western Association of Nurserymen, Hotel Muehlebach, Kansas City, Mo.

January 11 and 12, Iowa Nurserymen's Association, Des Moines.

January 15 to 17, Illinois State Nurserymen's Association, Hotel La Salle, Chicago.

January 22 and 23, short course for nurserymen, Ohio State University, Columbus.

January 24 and 25, Ohio Nurserymen's Association, Neil House, Columbus.

January 31 and February 1, Michigan Association of Nurserymen, Detroit.

OREGON MEETING.

The autumn meeting of the Oregon Association of Nurserymen has been set for Monday, October 1, at the Heathman hotel, Portland. The usual 1-day sessions will be held, with discussion of changes and prospects which the end of the war has brought.

CALIFORNIA CONVENTION.

The California Association of Nurserymen will hold its convention, September 25 and 26, at the Clark hotel, Los Angeles. Committees are arranging for prominent speakers to address the convention and for entertainment. Rapid committee work followed lifting of the ODT ban on conventions, in order to prepare for the event.

Reservations must be mailed to reach Executive Secretary Jack Lincke, 505 Bartlett building, 215 West Seventh street, Los Angeles 14, by September 15 to assure hotel accommodations and meals.

NORTH JERSEY MEETING.

Now that the war is over, the North Jersey Metropolitan Nurserymen's Association hopes to resume its monthly meetings. By way of preliminary celebration, ladies' night is set for September 25 at the Moresque restaurant, 111 Prospect avenue,

West Orange. Reservations are to be made with the secretary, William Flavelle.

PRINCETON PARTY.

The open-house victory party held by the New Jersey Association of Nurserymen in cooperation with the Princeton Nurseries, Princeton, N. J., was postponed from September 8 to the following Saturday, September 15, on account of conflict with other nurserymen's meetings, particularly that of the Virginia Association of Nurserymen.

WISCONSIN OUTING.

Ed Eschrich must have had a premonition that the war would end soon. About ten days before V-J day he decided to entertain the Wisconsin Nurserymen's Association at Brown Deer park, near Milwaukee, August 22. He is vice-president of the Wisconsin Nurserymen's Association.

The end of gas rationing, together with a beautiful day, resulted in an attendance of nearly 100 Wisconsin nurserymen and members of their families. The food and all entertainment were provided by Mr. Eschrich.

A. H. Hill, Dundee, Ill., president of the American Association of Nurserymen, was present and in his short impromptu talk gave the group a realistic picture of the postwar needs of

the nursery industry. Mr. Hill felt that closer cooperation between the industry and experiment stations would come and be very helpful. He also stressed the importance of membership in the A. A. N. and the additional needs of its Washington office. His plea resulted in several applications for the A. A. N. from our membership, which is now about fifty per cent national.

E. I. Chambers, Wisconsin state entomologist, expressed his fear of the impending invasion of the Japanese beetle and the already disastrous results of the corn borer and spittle bug. He was in hopes that DDT would solve some of these problems, but warned it was still too early to make any commitments on its actual value.

With the prospect that ODT regulations on conventions would be lifted soon, renewed interest was shown in our annual meeting, which will be held in early December at Milwaukee. Thomas S. Pinney, Sec'y.

FAREWELL LUNCHEON TO DR. TUKEY AT GENEVA.

Dr. Harold Tukey was honored by the New York state nurserymen at a meeting held August 9 at Geneva. Richard Holmes presented Dr. Tukey with a pen and pencil set on behalf of the western New York nurserymen. Presentation was made on the occasion of twenty-five years of association with the nursery industry in New York state and in honor of his appointment to head the department of horticulture at Michigan State

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SUPERIOR
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College, East Lansing. The presentation was made during a farewell luncheon at the Seneca hotel. The luncheon was attended by over thirty New York state nurserymen, who took the occasion to express to Dr. Tukey their appreciation of his friendly cooperation and his contribution to the advancement of horticulture as well as the friendly relations he has always maintained in the nursery business.

The dinner was preceded by a tour of the experimental work of interest to nurserymen at the New York state agricultural experiment station at Geneva. The visitors saw experimental work on the control of the Oriental fruit moth by parasites by Dr. E. H. Wheeler, of the biological control laboratory. They inspected new equipment for the storage of nursery stock.

Dr. J. M. Hamilton demonstrated new equipment used experimentally in dusting fruit trees with various mixtures of dusts and water. This work is being done in the Hudson valley and in western New York. Dr. F. L. Gambrell, entomologist, demonstrated a fog generator in which DDT was used effectively for control of elm and other shade tree pests and also an insecticide mortar which blew a charge of dust into the top of a 40-foot tree. The final stop on the tour was devoted to the recent work of Dr. C. L. Hamner and Dr. H. B. Tukey on the weedical properties of 2-4-D, including the effect on lawns and demonstrating the application of the chemical by fog generator and aerosol bomb. Weeds were affected for distances of over 100 feet from the point of liberation of the 2-4-D from these several pieces of equipment.

During the afternoon, the directors of the New York State Nurserymen's Association held their summer meeting. Harold Taylor, of Rosedale Nurseries, Tarrytown, presided. Reports were read by the chairmen of the committees: Legislation, by John Kelly, Dansville; membership, by Howard Maloney, Dansville; ethics and standards, by Leslie MacRobbie, Patchogue (commended for vigorous and effective action); Carl E. Ladd scholarship committee, by John Kelly; business survey, by L. J. Engleson, Newark; group insurance, by Donald Brown, Rochester; educational advisory committee, by Howard Taylor. An open discussion was held on the matter of training schools for nursery employees and for veterans.

The annual winter meeting is planned for New York city, January 21 and 22, to be held or not, according to government regulations at that time. A. M. S. Pridham, Sec'y.

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Readers' Comments

JOHNNY APPLESEED.

I have just read with a great deal of interest the article by W. L. Bloomer on Johnny Appleseed in your August 15 issue. Mr. Bloomer has presented Johnny Appleseed in what I consider a most factual manner.

The Boy Scout organization of this area of Ohio, with headquarters at Mansfield, chose to name its council in honor of Johnny Appleseed because of his example of unselfish service to his fellowmen. For the past ten years the Scouts in this area have planted nearly a million trees in memory of the work of John Chapman; while few of them have been apple trees, nevertheless, the propagation of our forests is now as necessary as was Johnny's propagation of the fruit trees in his day. Scouts take great pride in observing the forest as the trees grow from year to year.

Johnny Appleseed and his philosophy are very real to the youth of this area, where he spent about twenty years of his useful life. There is still one apple tree planted by him in April of 1821 in this vicinity. It brings forth a crop of apples each year.

Floyd Dent, Scout Executive.

JOHNNY'S ORCHARD.

I was much interested in the article regarding Johnny Appleseed in the issue of August 15.

My great-grandfather, Daniel Carter, whose ancestors came over with Lord Baltimore's colony in 1639, migrated from Maryland to the farm on which I now live and built the first white man's home in this (Montgomery) township in 1811. In 1815 my grandfather, John Springer, migrated from Pittsburgh, Pa., to this place and married Carter's daughter and settled on the adjoining farm, both of which we still own. John Springer's Pittsburgh home was near the old cider press where John Chapman collected his seeds and he became well acquainted with him there. Later when Chapman came to this locality he came to the Springer home and grew a nursery and lived with Springer for three summers. By this time the Carters had cleared considerable land, and on the Carter farm was planted from this nursery the largest Johnny Appleseed orchard in Ohio—thirty acres. I know because I spent much of my boyhood days in this orchard when it was in full bearing and I helped to clear it away later.

Much of this original orchard land has been in bearing apple trees continually for 120 years, as we replanted to better kinds as we cleared away the old ones. I like to talk about this orchard because there is nothing like it in the world today. Think of thirty acres of seedling apple trees, no two bearing fruit alike! There were apples of all sizes, from small crabs to large pippins, and all colors, shapes, flavors and qualities. I can go yet and mark the spot where the best ones grew. The Carters made an abundance of maple sugar and sorghum syrup there. They had a cider press and a large boiling plant where they made many barrels of apple butter and sweetened it somewhat with this sugar, and then hauled it to the eastern markets. In those early days we did not have to spray, and a wormy apple was the exception.

If you go to the museum at the Ohio State University, Columbus, you will see in a large showcase a model of the old cider press at Pittsburgh at which John Chapman collected his seeds. I had this press model made from wood of the last authentic Chapman tree on our farm and the last we knew of in this part of Ohio. It is quite odd. My cousin, Thomas Springer, made a drawing of this old press about sixty years

ago. It was not in use any more, but was still standing near his home.

Thos. E. Thornburg,
Orchard Heights Fruit Farms,
Ashland, O.

HORTICULTURAL TRAINING.

It is gratifying to all of us to note the continued emphasis you are placing on the subject of horticultural training. The report in the August 15 issue on horticultural training in England and the approach being taken there toward it prompted me once more to comment on the problem.

How does our attitude in America compare with that of England on horticultural training? Except in a few instances, we have not yet formulated any concrete plan for a practical approach to this problem. As I see it, the writing on the wall indicates that we are going to be deluged with a plethora of courses of all kinds, including lecture courses in the college, where the veteran will be expected to absorb horticultural knowledge and nursery practice by sitting and watching lantern slides or the more advanced technique of the movie. In some places these will be supplemented with a little practice in the greenhouse or a nursery. Then there will be convenient evening

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Beautiful stock B&B.

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J. Pfitzeriana, 2 to 3 and 3 to 4 ft.

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50 sheared Tsuga Caroliniana, 4 to 5 ft., \$6.00.

1500 Taxus Cuspidata, 10 to 12 ins., from 3-in. pots, \$400.00 per 1000.

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courses, mostly lectures, correspondence courses, everything but actual down-to-earth practical training taught by down-to-earth practical persons.

Personally, I am all for using any visual aid that will put the subject across. But the cart is being put before the horse. Instead of the practice supplementing the instruction, the instruction, and the things that go with it, should supplement the work.

The most practical way to train the veteran for the nursery field is to train him at the nursery. Trained elsewhere but in the environment in which he will subsequently work, what happens? He will enter the nursery with the idea that he already knows all about it and that his term of training will make him a privileged character. He will not be at home in a nursery crew, but awkward with tools and unfamiliar with most practices and operations. The pretty pictures he saw on the screen will fade in the face of stark reality. But when he finishes his training in the nursery he will be totally familiar with every operation and be at home in the environment.

Invariably the veteran will want to specialize. Elsewhere but in the nursery he will be permitted to do so, which is a mistake. One cannot make a decision to specialize until the field and all its parts are familiar. Then a wise choice can be made.

It is my opinion that some arrangements should be made whereby responsible nurseries and florists' establishments could be used to impart this training right in the nurseries and greenhouses, where emphasis can be placed upon the practical aspects of the field. Once or twice a week the men could meet at a common center for formal instruction in the sciences and in other phases of the work, but with the relationship between the instruction and the work the men are performing always kept. The regular workday should be recognized. This will do away with the tendency to play at being nurserymen. Those unfit will soon drop out.

The quickest way to help reinstate these men into civilian life—and I don't believe that they need any coddling—is to put them at productive work at once.

It is my firm belief that nurserymen should take a very active hand in this most important problem of horticultural training.

Patrick J. McKenna.

REGULATIONS as to retail and wholesale deliveries under ODT order 17 will probably remain in force until about November 1.

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5,000 RED HAVEN,	
24 to 30 ins.	250.00
2,500 HALE HAVEN,	
48 to 60 ins.,	
9/16	550.00
3,000 GOLDEN JUBILEE,	
48 to 60 ins.,	
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We also still have Year-old Apple available as low as 10 cents per tree. Also, 500,000 (yellows-free) Blakemore Strawberry Plants at \$7.00 per 1000.

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8 to 10 ft., 1/2 to 1-in. cal., well branched, per 10.	\$10.00	
per 100, \$85.00.		
8 to 10 ft., 1 to 1 1/2-in. cal., well branched, per 10.	\$12.50	
per 100, \$100.00; 1 1/2 to 2-in. cal., write for prices.		

Free baling with cash with order. 25 per cent cash with order, balance before shipment. All trees are Jap Beetle Quarantine Inspected.

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New Books and Bulletins

PLANT GROWTH.

For the purpose of answering the questions of amateur plant growers about the principles of plant growth, for their better success in flower and vegetable gardens, L. Edwin Yocum, associate professor of botany at George Washington University, Washington, D. C., has written an instructive book, "Plant Growth," just published by the Jacques Cattell Press, at \$3. He explains the structure and germination of seeds, the various parts of the plant, the methods of growth, the factors that promote or hinder growth and the soil conditions and elements favorable to the process. Twenty-five sketches and illustrations aid in the presentation of the text of 200 pages.

For the amateur who is seeking plant knowledge this book will be a welcome help to his education, for it simplifies and condenses material that, presented in detailed and scientific fashion, fills a number of textbooks. On the other hand, there is no effort to make a children's book out of the subject. Scientific terms are employed liberally, and a glossary provides definitions for those not explained in the text. Some of the newer theories and discoveries in plant growth are described, so that the home gardener may, if he is interested, share the acquaintance of the professional plantsman with methods of up-to-date plant culture.

BASIC HORTICULTURE.

Inquiries about books that present the fundamentals of gardening for those interested persons who wish to know the why and the wherefore find different types of works appealing to different persons. Some books in popular vein have been published in recent months to meet this call, and they have been briefly reviewed on publication.

Another type of work found useful is the textbook, primarily designed for college students taking up one branch or another of horticulture. One of these, "Basic Horticulture," published by the Macmillan Co. in 1942, at \$5, was written by Dr. V. R. Gardner, professor of horticulture at Michigan State College, who will be succeeded in the fall as the department head by Dr. H. B. Tukey, but will continue as head of the agricultural experiment station. As the name implies, this book covers a considerable range and hence the chapters are short, though the book includes about 450

pages. Chapters are devoted to classification of plants, plant structure and growth, temperature, water, light, nutrients, growth and fruitfulness, flower buds, pruning, fruits, propagation, pests and diseases, annuals, perennials and woody plants.

GRAPES AND WINES.

The author of "Fruits for the Home Garden" was the logical author for a book such as "Grapes and Wines from Home Vineyards," for this is not a book on commercial grape production or wine making, but for those amateurs whose joy is in growing and making their own. Dr. U. P. Hedrick, whose position as an authority on fruit growing has been widely acknowledged, reveals in the book his enthusiasm for good wine.

The book, just published by the Oxford University Press at \$3.50, contains a detailed discussion of the leading species of grapes grown in North America, their special adaptations and their care in the home vineyard.

The second half of the book is devoted to making wines of many types, with concluding chapters on their use in drinks and in cooking.

DISEASE CONTROL CHARTS.

Devised for utility in contents and form, "Controlling Disease and In-

sects on Ornamental Shrubs," by C. E. Wildon and E. J. Rasmussen, of the department of horticulture; Ray Hutson and E. I. McDaniel, department of entomology, and Ray Nelson and F. C. Strong, department of botany and plant pathology, has just been issued as extension bulletin 270 by Michigan State College, East Lansing.

Virtually the entire contents are tables printed across the long way of the page, with the front cover containing one perforation by which the booklet can be hung on a nail for easy reference. The pamphlet consists of thirty-six pages and cover, about 6x9 inches.

The inside front cover presents three tables giving the formulas of common insecticides in small quantities, the equivalent quantities of liquid materials mixed by parts and equivalent quantities of dry insecticidal materials for various quantities of water.


After a single-page listing of cautions in spraying, a list of shrubs is

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BARE ITEMS YOU DO NOT
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given alphabetically by common name, with the insects and diseases with which each is troubled and the control measures recommended. This enumeration covers twenty-four pages, and then follows a discussion of fungicide and insecticide materials.

In similar form appears bulletin 269 on "Controlling Diseases and Insects on Ornamental Trees."

LIVING WAR MEMORIALS.

Supplementing the brochure issued in December, 1944, on "Memorials That Live," the American Commission for Living War Memorials, Columbus, O., has just published a 36-page illustrated brochure entitled "More About Memorials That Live." In this booklet pictured suggestions are given with respect to community forests, water-front facilities, park camps, playgrounds, recreation centers, community houses, swimming pools, stadiums and sports centers. Particularly interesting are four pages of this brochure devoted to a discussion of raising funds and financing such projects. Popular subscriptions, large individual gifts, public taxation, fund drives, recreation profits and assessments are described as methods of raising funds for such projects.

The American Commission for Living War Memorials was organized in 1944 by the national committee on physical fitness of the Federal Security Agency. The chairman is George M. Trautman, 30 East Broad street, Columbus 15, O., who is president of the American Association of Professional Baseball Clubs. Other outstanding figures in the athletic world are members of the commission or advisers to it.

BULLETINS RECEIVED.

"Native Grapes and Their Wildlife Value," by A. B. Massey, the latest bulletin of the Virginia Polytechnic Institute, Blacksburg, considers the native grapes of Virginia and, in less detail, those of the southern Appalachian states with regard to their importance in the diet of various forms of wild life. Fourteen species and varieties are discussed and information is given as to their propagation. Several illustrations and sketches enhance the usefulness of this pamphlet of twenty pages and cover.

JAMES P. SMART, son of W. J. Smart, of the D. Hill Nursery Co., Dundee, Ill., came home from San Antonio for a week early in September and returned to duty at Amarillo, Tex. He expects to serve with overseas replacements soon.

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Root-Pruning

The subject of root-pruning in horticultural plants has been a controversial one for many years, and even now there is difference of opinion regarding it. As a matter of fact, practically any plant that is transplanted undergoes root-pruning, and root-pruning often occurs as a result of tillage. The nurseryman, however, is interested in root-pruning in the nursery to help overcome shock in the transplanting of some types of plants. These comments on the subject, by Dr. Henry Hartman, head of the department of horticulture of Oregon State College, Corvallis, appeared in the state bulletin for nurserymen recently.

To understand the effects of root-pruning, it is necessary to know something about how roots grow and function. Linear growth in roots occurs only at the tip of roots as a result of cell division in the growing point. Increase in the diameter of roots occurs as the result of cell division in the cambium layer. Roots absorb water and plant food materials largely in the tip region. The root hairs are located just back of the growing point, and these carry on most of the absorption.

It is evident, therefore, that when a plant is dug or moved, most of the growing points and most of the root hairs are lost. It is practically impossible to dig the average plant without sacrificing these important root parts. This means that temporarily, at least, the plant has lost much of its ability to absorb water and nutrients. In the case of deciduous plants this is not usually serious, because such plants are dug while they are dormant or when their water and nutrient requirements are low. New growing points and new root hair zones have usually formed by the time the plants come out into leaf. With some of the evergreen plants, the situation is different. These plants are never fully dormant, and their water and nutrient requirements are constant. Loss of all the growing points and all of the root hairs may result in severe shock, accompanied by yellowing of the foliage and even in defoliation.

When a plant stands in place and is not disturbed for a number of years, the growing points of the roots and the root hair zones extend away from the plant beyond the area that can be included in the ball of earth that accompanies the plant during transplanting. To get around this difficulty the roots must be shortened some time prior to digging so that

new growing points and new root hair zones will develop in the area that is to constitute the ball. Such shortening of the roots is known as root-pruning.

Plants vary greatly in the amount of root-pruning they require. They also vary in the frequency at which root-pruning should be done. As a rule, a plant that forms the long, barren types of roots requires root-pruning more than those that are inclined to develop a matted or fibrous type of root close to the crown.

Root-pruning should not involve cutting off all the main roots at the same time. This would be equivalent to transplanting the plant without root-pruning at all. A better plan is to prune back only a portion of the roots and to cut these back far enough so that the new root growth will occur close to the crown.

The time at which root-pruning should be done is hard to determine. Obviously, this will vary with the time of digging, the kind of plant and with climatic factors. In western Oregon most plants make a great deal of root growth during the winter months, and if roots are cut back

in the fall, new root growth is usually quite pronounced two or three months later.

Root-pruning always results in a curtailment of top growth, and the reduction in top growth is usually proportionate to the amount of root-pruning done. This, of course, results in a reduction of the size of the plants, but it has advantage from a transplanting standpoint. Root-pruning done some time prior to the final digging causes the plants to become more dormant and, hence, reduces the amounts of water and nutrients they will require. This effect of root-pruning is often beneficial even though the root-pruning itself does not result in a substantial development of new roots.

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New Carlisle, O.

FERTILIZERS' ACTION IN THE SOIL.

[Continued from page 8.]

pH's the nitrate ion is readily ab-
sorbed and assimilated by the plant,
while the ammonium ion, if ab-
sorbed, tends to accumulate. These
reactions to acidity account for the
fact that nitrogen deficiency of eri-
caceous plants growing in highly
acid soils can be more readily over-
come by applications of sodium ni-
trate than ammonium sulphate.

A ready supply of sodium in the
soil may tend to supplement potas-
sium as a plant nutrient and may aid
in the conservation of calcium and
magnesium.

Sodium compounds have the tend-
ency to deflocculate the fine soil
particles. Because of this, continued
heavy applications of sodium nitrate
to clay soils high in colloidal matter
will often result in a poor physical
condition of the soil. There is prob-
ably little likelihood of this, how-
ever, in humid regions and with the
practices usually followed in ferti-
lizing woody ornamental plants.

More ammonium sulphate than
sodium nitrate is now used in this
country as a carrier of nitrogen. It is
used extensively in mixed fertilizers
and for straight applications. It car-
ries twenty per cent nitrogen. Most
of the ammonium sulphate is the
by-product of coal coking and the
destructive distillation of bituminous
shales and bones. A small amount is
being produced synthetically. The
ammonia gas given off while coal is
coked is passed through coolers and
a tar extractor to a saturator contain-
ing sulphuric acid, where the am-
monium sulphate is precipitated. A
ton of coal in coking yields about
thirty pounds of ammonium sul-
phate. Ammonium sulphate, as sup-
plied to the market, contains almost
no free acid. It is a crystalline salt
and does not absorb moisture freely;
consequently it does not cake if
stored in a reasonably dry place.

Nitrogen in the form of ammonia
does not move so readily in the soil,
is not absorbed so easily by the plant
roots and is more resistant to leach-
ing than is nitrate nitrogen. The
ammonium molecule carries a posi-
tive charge and is held closely by
the soil particle. Consequently some-
what slower plant response can be
expected to applications of ammo-
nium sulphate than to those of ni-
trate of soda.

Ammonium sulphate is of acid re-
action and tends to increase the acidi-
ty of the soil considerably if it is
applied continuously and in heavy
applications. Experimental evidence
indicates that it takes one and one-

CUTLER & DOWNING CO.

BENTON HARBOR, MICH.

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Reds	Blacks
Latham	Cumberland
St. Regis	New Logan
Taylor	Sodus

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Dewberries

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Blackberries

Eldorado	Blowers	Alfred
	Mersereau	

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Boysenberries

Thorny	Thornless
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Strawberries, Gooseberries, Grapes,
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MacDonald
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Canada Red

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KELLY'S FRUIT TREES

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Dansville, N. Y.
Since 1880

half to two tons of ground limestone to neutralize the acidifying effect of a ton of ammonium sulphate. On neutral or slightly acid soils the reduction of acidity following normal applications of ammonium sulphate to most ornamental plants is seldom detrimental, but may be beneficial to those requiring an acid soil.

Ammonia nitrogen is slightly available at pH's below 5, increases rapidly between pH 5.0 and 6.0 and reaches its greatest availability between pH 6.0 and 6.5, above which its availability decreases. In highly acid soils, the free acids produced from ammonium sulphate may render soluble certain aluminum compounds which are toxic to plant growth.

In recent years there have been many experiments to determine whether ammoniacal forms of nitrogen could be absorbed directly by the plant or if nitrification must first take place. There is more and more evidence to indicate that many plants, at least in some stages of their development, can absorb ammoniacal forms of nitrogen directly. In the seedling stage of plant development, ammonia appears to be absorbed in preference to nitrates. Plants growing in poorly aerated soil or in soils low in soluble calcium and potassium may absorb nitrogen in the ammonia form in preference to that in the nitrate form. Nitrification does not occur readily below pH 6.0.

The choice between ammonium sulphate or other ammoniacal sources of nitrogen and sodium nitrate or other nitrate sources of nitrogen for fertilizing most ornamental plants may be made on the basis of two considerations, (1) the soil acidity requirement of the plant and (2) the ability of the plant to utilize the nitrogen immediately. Since these two materials cause different soil reactions, as explained, the choice may depend on this factor. For late fall applications to trees and other ornamental plants, applications of ammonium sulphate are preferable to sodium nitrate because it is more slowly available and more resistant to leaching. Root activity is low in late fall and cannot utilize large quantities of a readily available source of nitrogen as would be present if sodium nitrate were applied. In the general practice of fertilizing woody ornamentals a combination of ammonium sulphate and nitrate of soda may be expected to give better results than an application of either one alone.

Among other inorganic nitrogen carriers, calcium nitrate is made by treating nitric acid with lime and



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For winter delivery.

Order now while list is complete.

EUROPEAN TYPE, table varieties.
Thompson Seedless, early, white.
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Malaga Red, early, large.

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Alicante, red. Carignane, black.

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Also several other varieties.

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10 for \$1.00 10 for \$1.50

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From our own seedlings, mixed... 6.00
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Seeds will be ready for delivery in September. Should be planted as soon as possible for best germination. Cash with order.

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The Home of Distinctive Plants
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is now available in granular form. It carries fifteen and one-half per cent nitrogen and gives an alkaline reaction in the soil. It is hygroscopic in nature and should not be stored for long periods. It is very soluble in water and is highly available to plants. It is especially desirable as a carrier of nitrogen where calcium is also desired.

Ammonium nitrate is manufactured by passing ammonia into nitric acid. The product is also combined with calcium to form the material of



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the trade name Cal-Nitro. Ammonium nitrate analyzes thirty-five per cent nitrogen, one-half in the nitrate and one-half in the ammonia form. It is probably the quickest-acting fertilizer known. It causes a slight acid reaction in the soil.

Chemically speaking, calcium cyanamide and urea are organic nitrogen compounds, but most agronomists tend to classify them with the inorganic forms. They are sometimes referred to as nonprotein organic nitrogen compounds. Calcium cyanamide is available in powdered or granular form and carries twenty-one to twenty-two per cent nitrogen and equivalent to seventy per cent calcium hydroxide. Consequently, it gives a definite alkaline reaction in the soil. When applied to moist soil, it is converted to urea, finally to ammonia and to nitrates. It is a good drier material, and when thirty to sixty pounds are used in a ton of mixed fertilizer, the resulting mixture handles very well. Indications are that it should not be used in mixed fertilizers in greater quantities than 100 or 150 pounds per ton. Applications may have a tendency to tie up the phosphates, destroy the soil microorganisms and cause soil sterility when used in large quantities.

Urea is manufactured by combining pure ammonia with pure carbon dioxide gas under high pressure. It is available in pellet form, analyzing forty-six per cent nitrogen. Uramon, a semigranular material, is the most common trade-name form of urea and carries forty-two per cent nitrogen. It is completely soluble in water, and it may be utilized as such by some plants, but more often is converted first to ammonia than to the nitrate form. Although it is completely soluble, it is quite resistant to leaching. Its initial reaction in the soil is to cause slight alkalinity, but a slight acid reaction soon results.

Ammo-Phos, potassium nitrate and Nitrophoska are examples of compounds carrying two or more plant nutrients. Ammo-Phos is a granular monoammonium phosphate product sold in two grades, A-11-48-0 and B-16-20-0. It produces a slight acid reaction in the soil.

Potassium nitrate is a by-product of the refining of nitrate of soda. It is manufactured by treating muriate of potash with nitric acid to which is added ammonia, and it is found as natural deposits. Its analysis is 14-0-44 and it tends to produce a slight alkalinity in the soil. Nitrophoska is made by combining diammonium phosphate, ammonium nitrate or urea and muriate or sulphate of potash. Several analyses are avail-

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NORWAY MAPLE.
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Thousand rate 10 per cent less.
Combination carloads to Eastern
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SHADE AND FLOWERING TREES
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Fruit Tree Seedlings
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Combination carloads to Eastern
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OUR SPECIALTIES:

Flowering Cherries, Crabs and Plums
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Specializing in fruit tree seed-
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Norway and Schwedler Maple,
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able, one of the most common being 15-30-15.

Among the most common organic nitrogen carriers, used alone or in mixed fertilizers, are dried blood, slaughterhouse tankage, activated sewage sludge, pulverized animal manures, cottonseed meal and soybean meal.

Dried blood analyzes eight to fourteen per cent nitrogen, three-tenths to one and one-half per cent phosphoric acid and, one-half to eight-tenths per cent potash. The availability of nitrogen from dried blood is considered higher than from any other common organic source. However, it is thought to be only about eighty per cent as efficient as sodium nitrate or ammonium sulphate in stimulating plant growth.

Slaughterhouse tankage carries six to eight per cent nitrogen and one to three and one-half per cent phosphoric acid, and its availability is somewhat less than that of dried blood. Its analysis varies with the amount of bone included in the tankage. Activated sewage sludge is now available from several cities. Most common is that marketed by the city of Milwaukee as Milorganite. It contains six per cent nitrogen and two and one-half per cent phosphoric acid. Its relative availability is somewhat less than that of dried blood. Pulverized animal manures are now generally available on the market. Sheep, goat and cattle manure analyze about one to two per cent nitrogen, one to two per cent phosphoric acid and two to three per cent potash. Pulverized poultry manure analyzes five to six per cent nitrogen, two to three per cent phosphoric acid and one to two per cent potash.

Cottonseed meal and soybean meal are the principal sources of protein organic nitrogen fertilizers. Cottonseed meal contains six to nine per cent nitrogen, two to three per cent phosphoric acid and one and one-half to two per cent potash. Soybean meal contains approximately six and one-half per cent nitrogen, three per cent phosphoric acid and one per cent potash. Measured in terms of availability of the nutrients and relative crop yields, the seed meals are less efficient than dried blood.

The form in which the nitrogen in these organic carriers comes available to the plants has been the subject of much discussion. It was formerly thought that they had to be changed to nitrates by microorganisms before they could be utilized. It is now felt that some plants can utilize proteins direct, and it is

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OREGON-GROWN TREES

Complete line of Shade, Fruit and Flowering Trees, Filberts and Grapes, both American and European.

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known that several plants will utilize nitrogen in the ammoniacal form.

There are several advantages of the use of organic nitrogen fertilizers. They tend to liberate their nitrogen in an available form gradually; consequently applications made in the spring will supply available nitrogen throughout the growing season. They have little influence upon soil acidity, but most of them tend slightly to increase acidity. They are not readily leached from the soil. When added to fertilizer mixtures, they improve its physical structure. The main criticism of the organic nitrogen materials is their cost when compared on a unit basis with sodium

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By the 100, the 1000 or million.

Margaret Fulton, Bit O'Heaven, Gardenia, Aladdin, Token, Algonquin, Peggy Lou and Margaret Beaton—our specials.

Price list and shipments by November 1. Remember us. Healthy stock.

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Peach Pits



Used and recommended by leading Nurseries of United States. 4,500 seeds per bushel; uniform, high germination—outstanding vigor and growth. Sacked in good bags.

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No. Bushel	Per Bushel
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6 to 24.....	2.85
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Again we offer and recommend

LOVELL PEACH SEEDS

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We pay more to get the best and sell them at the following competitive prices, cash with order or C.O.D.

1 to 5 bus. at \$3.00 per bu.
6 to 24 bus. at \$2.85 per bu.
25 to 99 bus. at \$2.75 per bu.
100 bus. up at \$2.50 per bu.

1944 crop, immediate shipment. F.O.B. Hickory, N. C.

1945 crop, car now rolling. Should arrive by Sept. 15. Shipment immediately, F.O.B. Hickory, N. C.

Rush us your order, and we will rush the seeds to you, so you can plant at the proper time.

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Hickory, N. C.

North Dakota and Montana Seeds

Northern-grown Tree, Shrub and Wild Flower seeds. Wholesale crude botanicals.

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nitrate and ammonium sulphate. On this basis, their cost is two to three times that of the inorganic carriers.

Because of the advantages of the organic carriers, they may well continue to make up a part of the nitrogen in mixed fertilizers. In complete fertilizers for trees and shrubs they may furnish one-fourth of the nitrogen. This amount may be slightly increased when the complete fertilizers are used for evergreens.

[To be concluded.]

DDT IN COLD-WATER PAINT.

Tests on some 500 farms have proved the efficacy and safety in use of DDT in a cold-water paint, announces C. J. Zimmerman, president of Carbola Chemical Co. The product is nontoxic as well as noninflammable. Tests began a year ago and have been made through county farm agents in various states, who have placed the insecticide with farmers and checked the results.

These tests have demonstrated that the DDT paint, applied to walls and ceilings, kills flies, mosquitoes, spiders, lice, ants and other insects which land on the painted surface for even a moment.

An important advantage of the Carbola formula is that it leaves the product as harmless to the skin of human beings and animals as was the DDT powder when sprinkled on the clothing of millions of civilians and soldiers by our army in Italy to kill the typhus louse, the original use of DDT. The amount a cow might lick from a painted surface does no harm to the animal.

The water paint is not toxic, says Mr. Zimmerman, because DDT becomes toxic only when mixed with an oily base, which dissolves the DDT. It does not dissolve in water or perspiration. The mineral-and-water base holds the DDT on the wall; it does not evaporate with the water and remains active for months.

PYRETHRUM UNRESTRICTED.

Among the many items removed from restrictions by the War Production Board, effective August 1, is pyrethrum. Hitherto it has been limited to the most essential agricultural applications, but is now made available for unrestricted use.

Rotenone, however, also free from allocation controls, will not be available in quantities until supplies come from the Far East, possibly not until next spring or summer, according to WPB estimates.

OPERATORS of commercial motor trucks no longer require a certificate of war necessity.

New Crop PERENNIAL SEEDS

All seeds that you can sow now. All "A.B.C. Supreme Quality."

AQUILEGIA, long-spurred,
Mrs. Scott Elliott.
Tr. Pkt., 40c; 1/4 oz., \$1.00; oz., \$3.50.

BELLIS PERENNIS
Monstrosa Double Rose
The popular English Daisy. Tr. Pkt., 50c; 1/4 oz., \$3.00; oz., \$9.50.

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Black Knight Series. Darkest of all.
Blue Bird Series. A white bee; medium blue petals.

Blue Jay. Medium to dark blue with dark bee.

Cameliard Series. Lavender self with white bee.

Galahad Series. Finest white, 3-inch flowers; pyramidal spikes.

Guinevere. Light pink-lavender with white bee.

King Arthur. Royal violet with white bee.

Round Table Series. All the colors of the "Knights and their Ladies" series, including many not yet introduced.

Summer Skies. Light blue with white bee.

PRICES ON ABOVE

Tr. Pkt., \$1.25; 1/8 oz., \$2.50;
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GIANT PACIFIC HYBRIDS

Vetterle & Reinelt

Blue Shades.

Clear White.

Lavender Shades. A fine pastel-colored strain.

Pastel Shades. Mixture of lavender and blue pastel shades.

Violet Shades. Deep, rich, violet-blue colors with many contrasting white bees.

V. & R. Mixture. A very fine general hybrid mixture of all V. & R. varieties.

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Each Tr. Pkt., \$1.00; 1/8 oz., \$2.00;
1/4 oz., \$3.50; Oz., \$12.00.

MISCELLANEOUS STRAINS

Belladonna Improved (Cliveden Beauty). A very select strain of strong, vigorous habit. Large flowers of brilliant iridescent turquoise-blue.

Bellamosum Improved. A rich, deep blue form of Belladonna.

PRICES ON ABOVE

Tr. Pkt., 40c; Oz., \$3.00; 1/4 lb., \$10.00;
lb., \$35.00.

Heuchera Sanguinea Hybrids, Mixed

Rich, bright coral-red. Large bells.

Tr. Pkt., \$1.00; 1/8 oz., \$2.00;

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Primula Polyantha Veris Hybrids

A.B.C. Private stock. Exceptional quality in color range and size of blooms.

Tr. Pkt., \$1.25; 3 Tr. Pkts., \$3.00.

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STRAWBERRY PLANTS, certified by state department of agriculture. Grown on new land. We are now booking orders for fall 1945 and spring 1946 as follows: Missionary, Blakemore, Klommore, \$7.50 per 1000; Ambrosia, Premier, Dunlap, Tenn. Beauty, \$8.50 per 1000; Gem Everbearing, \$12.50 per 1000; Minnesota 1166 Everbearing, \$15.00 per 1000. Due to the small planting of strawberries this spring, there will be a short crop of plants for the coming planting season. 20 per cent deposit assures you plants at the proper time.

ROMINE PLANT FARM, Dayton, Tenn.

GEM EVERBEARING STRAWBERRY PLANTS

We are a reliable source of supply for everbearing Strawberry plants. Now booking orders for future delivery. Special prices on large quantities.

We can also furnish large quantities of Rhubarb and Asparagus plants in all sizes.

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DAFFODILS, Tenby Obvallaria, early yellow, \$25.00 per 1000; 6 hardy varieties, mixed, first size, \$25.00 per 1000; smaller blooming size, \$15.00 per 1000; Jonquilla, smaller blooming size, \$20.00 per 1000. F.O.B.

MRS. R. GABLE, Haralson, Ga.

EVERGREENS

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Species	Age	Size	Per 1000
Am. Red Pine	2-yr.	2 to 4 ins.	\$15.00
Banks Pine	2-yr.	4 to 6 ins.	12.50
Banks Pine	3-yr.	6 to 15 ins.	15.00
Pitch Pine	2-yr.	4 to 8 ins.	12.50
Pitch Pine	3-yr.	6 to 14 ins.	15.00
Pitch Pine	5-yr.	15 to 30 ins.	17.50
Ponderosa Pine	3-yr.	4 to 8 ins.	15.00
White Pine	3-yr.	3 to 6 ins.	17.50
White Pine	5-yr.	5 to 10 ins.	20.00
Norway Spruce	2-yr.	4 to 6 ins.	20.00
White Spruce	3-yr.	4 to 6 ins.	18.00
Douglas Fir	2-yr.	3 to 5 ins.	15.00

TRANSPLANTED STOCK

Species	Age	Size	Per 1000
Banks Pine	2-2	6 to 12 ins.	\$17.50
White Pine	2-2	4 to 8 ins.	20.00
White Pine	2-3	4 to 10 ins.	25.00
Black Hills Spruce	2-2	3 to 6 ins.	30.00

SAMUEL E. DIBLE
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25,000 BLUE SPRUCE

Good color and shape. Cut Christmas trees only. 4 to 5 ft., \$1.00; 5 to 6 ft., \$1.50; 6 to 8 ft., \$2.00. These prices are subject to change after October 1. All orders must be accompanied by 25 per cent cash, balance on delivery or before December 10.

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EVERGREEN LINERS

for fall 1945, spring 1946.

rite for list.

SUNCREST EVERGREEN NURSERIES

Johnstown, Pa.

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Scotch Pine, nice grade, our own stock. Located 60 miles east of Pittsburgh. We recommend early ordering. **SUNCREST EVERGREEN NURSERIES**, Johnstown, Pa.

MUGHU PINE, 2-yr. seedlings, \$6.00 per 100. Balsam fir, 4-yr., 4 to 5 ins., \$32.00 per 1000. List on request.

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FRUIT TREES

FIGS

Texas Everbearing

Well branched, heavy rooted, absolutely free of disease.

	Each	Each
	per 100	per 1000
15 to 18 ins.	\$0.15	\$6.12
18 to 24 ins.	.20	15
2 to 3 ft.	.25	20
3 to 4 ft.	.35	30

500 at 1000 rate.

20 per cent deposit with order assures you top-quality figs this fall. Balance cash before shipment, or C.O.D. No packing charges on orders booked now.

H. E. CANNON NURSERY & FLORAL CO.

Arlington, Texas

GRASS SODS

GRASS SODS delivered anywhere.
LAUREL NURSERY
188-19 Merrick Rd.
Springfield Gardens, L. I., N. Y.

HARDY PLANTS

CLOSE-OUT

HEMEROCALLIS

Duo Bloom, Dumortieri, Sovereign, Modesty, Mulleri, Mrs. W. H. Wyman, Gypsy, Harvest Moon, Calypso, Bagdad, Winsome, Gracilis.

\$15.00 per 100.

Fulva, Gold Dust, Minor.

\$7.50 per 100.

AUTUMN-FLOWERING IRIS

Autumn Elf, Autumn Haze, Black Magic, Eleanor Roosevelt, Sangreal.

\$15.00 per 100.

BEARDLESS IRIS

Pseudacorus, Pseudacorus immaculata,

Pseudacorus gigantea.

\$15.00 per 100.

SIBERIAN IRIS

Excellent for cut flowers.

Bob White, Caesar, Butterfly, Dragonfly, Emperor, Geo. Wallace, Llewellyn, Mrs. Gray Hill, North Distin, Papillon, Peggy Perry, Perry's Blue, Pyzmy, Coreana, Periwinkle, Red Emperor, Summer Sky, Skyrocket, Skylark, Snow Queen, True Blue, Lady Northcliffe, Kingfisher Blue.

\$10.00 per 100, \$75.00 per 1000.

EMIL A. WITTMAN

1434 Van Houten Ave. Clifton, N. J.

LARGE FIELD PLANTS, pink and bronze Cushion and mixed early-blooming, hardy Mums, 25c each. Korina Mums, 15c. Scabiosa Fiecheri, 1c. Achillea Filipedulina, 5c. Centaurea Macrocephala, 25c. Blue Stokesia, 15c.

Divisions, above Mums, 5c. Iris, 1c. Physostegia Virginiana, 1c. Eupatorium Coelestinum, 5c. Chives, 1c. Blackberry Lily, 1c. White Swan Daisy, 7c. Potentilla Warreni, 1c. Hemerocallis Flore Pleno and Lemon, 3c. Veronica Amethystina, 10c. Achillea The Pearl, 5c. Heuchera, 15c. Pink Peony, 15c. Cash, F.O.B.

HILLVIEW GARDENS Fort Madison, Ia.

THE DELPHINIUM OF TOMORROW

LYONDEL GIANT HYBRIDS

Massive spikes, stately, majestic, colorful. A new strain especially selected for its large-size flowers and wide range of beautiful colors. Doubles, semidoubles, singles. Extremely hardy.

Field-grown plants for fall shipment.

\$4.00 per dozen, \$25.00 per 100

CORLISS BROS., INC. NURSERIES

Gloucester, Mass.

IRIS in Surplus, 12c each. Sent express C.O.D.

Bearded: Frieda Mohr, Pres. Pilkington, Ramones, El Capitan, Selene, Midgard, Kochi, Dolly Madison.

Beardless: Pseudacorus. Siberian: Blue Owl and Caesar.

WHEATRIDGE NURSERY

7800 W. 38th Ave. Wheatridge, Colo.

SURPLUS PEONIES, 3 to 5 eyes.

Queen Victoria, white, 15c
Festiva Maxima, white, 30c
Eduile Superba, early, deep pink, 20c
Reine Hortense (purchased as such, but shade a trifle), 25c

HOLM'S LANDSCAPE NURSERY

Box 113 A Homewood, Ill.

CUSHION MUMS, 2 1/2-in. potted.

Order now for fall delivery.

Pink, white, red, bronze, yellow, also Sept. Bronze and Sept. Gold, \$12.00 per 100, \$100.00 per 1000.

WM. VITTMER, 35 N. School St.,

Manchester, Conn.

20 choice tall Phlox, 25 perennials, 30 Sedums, 35 Violets, 15 Asters, 20 Divaricata, each assorted lot \$1.00, or all six for \$5.50.

SUNNYSIDE GARDENS

Madison, Neb.

HARDY MUMS AND CHRYSANTHEMUMS

Mixed colors, 300 for \$10.00.

Rooted heavy stock.

Orders promptly filled.

WM. E. WENTZELL NURSERY, Sewell, N. J.

ROOTS

MARY WASHINGTON ASPARAGUS ROOTS, September, October, November or April delivery. Large, strong, healthy, northern-grown and state inspected. Dug on day shipped and packed in moist peat. Order now. Supply limited. Two-season-old plants, 250, \$5.00; 500, \$9.00; 1000, \$15.00, F.O.B. here. (Also some one-season-old plants at \$12.00 per 1000.)

ARTHUR E. GUSTAFSON, Pine City, Minn.

WHITE MULTIPLIER ONION SETS.

\$15.00 per 100 lbs.

Cash with order (1500 lbs.)

ARMINTROUT'S NURSERY

Allegan, Mich.

SEEDS

V. and R. DELPHINIUM SEEDS. New crop, Pacific Giant strain. Guaranteed good mixed seeds. Order early. \$5.00 per oz.

SEBASTAPOL NURSERY CO.

Sebastapol, Cal.

HUBAM CLOVER SEEDS, tested, 100 lbs., free from Johnson grass, \$25.00. Order now.

EUBANK BROTHERS NURSERY

Waxahachie, Texas

PEACH SEEDS, Tennessee Naturals, \$5.00 per bu. Order now for fall delivery.

EUBANK BROTHERS NURSERY

Waxahachie, Texas

SHRUBS and TREES

LONICERA HALLIANA

Lining-out, 1000, \$15.00 per 1000

2-yr. 60.00 per 1000

WANTED

Chinese Elm, lining-out, 5 to 6 ft.

Chinese Elm, lining-out, 2 to 3 ft.

Boleana Poplar, lining-out, 2 to 3 ft.

Norway Maple, 4 to 8 ft.

Red Barberry, lining-out, 9 to 12 ins.

Hugonia Rose, lining-out.

BURKMAN'S NURSERY Roscoe, Ill.

We are now booking orders for Apple and Pear grafts for shipment spring 1946. Also will have 50,000 Apple and Pear acions to offer. 500 Gage Arborvitas, 31 to 24 ins. and 24 to 36 ins.; 1000 grafted Junipers, 4 to 5 ft. and 5 to 6 ft. in Hill's Dundee, Virginiana Glaucous, Virginiana Canaertii; 1000 Chinese Elm; 1000 American Ash; 500 Red Oak, 8 to 10 ft. and 10 to 12 ft.

EGYPTIAN NURSERY CO., Farina, Ill.

For Fall 1945 we will have a nice assortment of ORNAMENTAL TREES, SHRUBS and EVERGREENS, both liners and whip-grade stock. List now being compiled.

THOMAS B. MEEHAN CO.

Dresher, Pa.

Container-grown **CAMELIAS** of Merit

Write for List of

the Best from the Far West.

J. S. TORMEY

Tormey's Gardens, Temple City, Cal.

400 Oriental Planes, 3 to 5 ins.

100 Specimen American Holly, 6 to 10 ft.

200 Specimen Chamacyparis plisifera

aurata, 8 to 9 ft.

STEELE'S NURSERIES, Palmyra, N. J.

HONEY LOCUSTS, thornless or thorny,

several hundred, choice, well pruned, 1 to 3

ins. in diameter. Attractive prices.

BRUCE NURSERIES

Alanreed, Tex.

ROSEBUSHES

Your choice of 50 different varieties of

2-year-old field-grown rosebushes. Write for

variety and price list.

SOUTHLAND ROSE NURSERIES, Tyler, Tex.

MISCELLANEOUS

GRAPES, 1-yr., No. 1, at wholesale prices.

Per 100 Per 1000 Per 10,000

Concord \$10.00 \$9.00 \$80.00

Fredonia 11.00 100.00 900.00

Moore Early 11.00 100.00 900.00

Campbell Early 11.00 100.00 900.00

Delaware 12.00 110.00 1000.00

Niagara 11.00 100.00 900.00

Cynthiana 12.00 110.00 1000.00

CALIFORNIA LOVELL PEACH SEEDS

from 1945 crop. Well cared for in drying.

In bags of about 40 lbs. each, \$3.00 per

bushel. In lots of 10 bushels and up, \$2.50

per bushel, F.O.B. Rogers, Ark.

BENTON COUNTY NURSERY CO., INC.

Rogers, Ark.

1945 Crop **PEACH PITS**, Southern Col-

lected. High germination. Small seeds, \$3.50

per bu.; medium, \$2.50 per bu.; large, \$2.00

per bu.

Peach, Plum, Apricot, 1-ft., 2c; 2-ft., 30c;

3-ft., 40c; 4 ft., 60c; 5-ft., 70c; 6-ft., 80c.

Seedling Peach trees, \$25.00 per 1000. Cash

with order.

RIVERDALE NURSERIES Riverdale, Ga.

PANSIES

Ready now. Steele's Mastodon Jumbo

Mixed. Seed 100 per cent direct from Steele.

Price, \$8.00 per 1000, \$5.00 per 500.

TRAVERNICH NURSERY CO.

400 No. Sylvania Ave.

Ft. Worth 3, Texas.

SUPPLIES

RUBBER. Your Rubber requirements are

important. Know where to get it when you

want it. Belts, rubber bands, boots, coats,

gloves, hose, spray bulbs, aprons, budding

strips. Get our price sheet and catalog today.

BROADWAY RUBBER MFG. CO.

Louisville 2, Ky.

PRINTING

Letterheads, billheads, statements, cards,

envelopes, tags, blotters, folders, catalogs,

samples.

J. GARLAND HILL

Dept. A, Seaford, Del.

BAMBOO CANE STAKES
DYED GREEN—Pencil Thickness

Contents	Price
Per Bale	Per Bale
*12 in. 2000	\$ 5.75
*15 in. 2000	7.50
***1 1/4 ft. 2000	8.50
***2 ft. 2000	11.00
***2 1/4 ft. 2000	13.50
***3 ft. 2000	16.50
***3 1/4 ft. 2000	19.50
***4 ft. 2000	22.50
***4 1/4 ft. 2000	24.50
NATURAL COLOR—Medium Heavy	
***3 ft. 1000	\$13.50
***4 ft. 1000	17.00
***4 1/4 ft. 1000	18.00
***5 ft. 800	11.50
***5 1/4 ft. 100	5.00
NATURAL COLOR—Extra Heavy	
***5 ft. 250	\$13.00
***6 ft. 300	12.50
***7 ft. 150	11.00
***8 ft. 100	8.50

F.O.B. New York and Chicago. Bale lots only.

*These sizes available for prompt shipment from New York.
**These sizes available for prompt shipment from Chicago.

***These sizes available for prompt shipment from both New York and Chicago. Quantity discounts: 10 bales up, less 5 per cent. 25 bales up, less 7 1/2 per cent.

McHUTCHISON & CO.

95 Chambers St. New York 7, N. Y.

WOOD PLANT BANDS.

Used by the largest growers of Carnations, Snaps, Stocks, perennial plants and all plants to be transplanted in the greenhouse or outdoors. Get your supply now, also, for Vegetable plants for resale.

No.	Size in ins.	Weight per 1000	Per 1000
No. M-310	1 1/4 x 1 1/2 x 3 1/2	12 lbs.	\$2.95
No. M-320	2 x 2 x 3 1/2	15 lbs.	3.50
No. M-340	2 1/4 x 2 1/4 x 3	20 lbs.	5.75
No. M-350	3 x 3 x 3	21 lbs.	4.10
No. M-360	3 x 3 x 4	32 lbs.	4.75
No. M-391	4 x 4 x 4	40 lbs.	5.50

Packed 1000 to the carton. We do not break the carton.

LIGHT WOOD FLATS.

Suitable only for holding and shipping our Wood Plant Bands. Bands are not included at prices below.

M-	holds	12 1/4-in. bands	Per 100 flats
M-370,	holds	12 1/4-in. bands	\$2.75
M-390,	holds	12 1/4-in. bands	3.50
M-392,	holds	12 1/4-in. bands	3.75
M-393,	holds	6 1/2-in. bands	3.25
M-394,	holds	6 1/2-in. bands	3.50

Packed 100 to the carton. We do not break cartons.

AMERICAN BULB CO.

1335 W. Randolph St., Chicago 7, Ill.
31-37 W. 27th St., New York 1, N. Y.

KNOCK-DOWN FLATS.

CYPRESS HAS GONE TO WAR.

It is frozen under promise for Navy work. For the duration, we will ship Flats manufactured from a good grade of Yellow Pine lumber and NOT CYPRESS.

Standard specifications, inside measurements.	
16x12x2 1/2	\$1.25 per 100
16x14x3	14.25 per 100
20x14x2 1/2	14.00 per 100
20x14x3	16.25 per 100
22 1/2 x 15x2 1/2	15.75 per 100
22 1/2 x 15x3 1/2	16.00 per 100

All other sizes quoted on request. Prices f.o.b. Birmingham.

We are manufacturers, not jobbers. Freight to any point is a small item per Flat. Our Flats are the best. Why pay more? Our quality guaranteed. Prompt shipment, any quantity. Attach check to order.

HIGHTOWER BOX & TANK CO.

Birmingham, Ala.

MEL-LO PEAT

A pure Sedge Peat, weedless, odorless, no inert matter. Contains 2 to 2 1/2 per cent nitrogen, 86 per cent humus; acidity, 5.3 to 5.8. Excellent for seedlings, hardwood and softwood cuttings, transplanting evergreens and shrubs and ideal for top-dressing lawns.

1 to 10 2-bu. bags, f.o.b.	\$1.25
11 to 51 2-bu. bags, f.o.b.	1.10
51 to 100 2-bu. bags, f.o.b.	1.00
101 to 200 2-bu. bags, f.o.b.	.90

Mel-lo Peat is milled and fluffed by a special process, ready to use. Adopted by the universities, agricultural colleges, nurseries and landscape gardeners. Accept no substitutes; demand Mel-lo Peat. Our guarantee, check with order, prompt shipment. Wire, phone or write.

MEL-LO PEAT CO. Elyria, Ohio

PROFIT WITH PERF-O-RAIN.

Rain when you want it—low pressure—no rectangular strip watered—No overlap—No sprinkler heads or other gadgets—Portable lightweight pipe—Long life. Write for free folder. W. R. AMES COMPANY OF FLORIDA, 4005 E. Broadway, Tampa 5, Florida, or W. R. AMES COMPANY, 150 Hooper St., San Francisco 7, Calif.

RUBBER BANDS

No. 80 black rubber tube bands, 3/4 x 7 1/2 inches long; stretch to 30 inches. Samples on request. Price: 50c per lb.; 100-lb. lots, 35c. F.O.B. Canton. Shipment at once. Please send your order to THE M. CONLEY COMPANY, Canton, Ohio

SPHAGNUM MOSS.

Wisconsin 1945 crop.

Choice, long Sphagnum Moss, free from sticks.

Standard size, burlapped bales for immediate shipment at \$1.65 per bale, F.O.B. City Point, Wis. Cash with order. No C.O.D. shipments accepted.

J. C. NIELSEN COMPANY
7421 South Chicago Ave., Chicago 19, Ill.

GIBRALTAR Frost Covers pay for themselves. Economical, long-lasting, ideal for windbreaks, 6 ft. wide; 50 ft., \$13.75; 100 ft., \$25.00; 150 ft., \$39.00. NEW AMSTERDAM IMPORT, 122 Chambers St., New York 7, N.Y.

COTTONETTE Squares are best for balling. Saves time and twine. All sizes in stock. Write NEW AMSTERDAM IMPORT, 122 Chambers St., New York 7, N. Y.

WANTED

The following seedlings: Mountain Ash, Prunus Tomentosa, Red Barberry, Viburnum Lantana, 2-yr. EUGENE A. DE ST. AUBIN & BRO., INC. Box 1, Addison, Ill.

TREES WANTED

Elm trees, 5 to 20 years old. ARTHUR V. LEY La Plata, Maryland.

WANTED

For late fall or early spring delivery, all varieties Grapes, Raspberries, Boysenberry, Asparagus and Strawberry plants. E. W. TOWNSEND & SON, Salisbury, Md.

WANTED

BLACK WALNUT TREES, 5 to 10 years old. ARTHUR V. LEY La Plata, Maryland

ERECT FACTORY.

Goulard & Olena, Inc., has acquired two and one-half acres of land at Skillman, N. J., just midway between New York and Philadelphia on the Baltimore & Ohio, Reading and Jersey Central main line railroads.

To add to present buildings and a spur track, construction has started on a new building of 25,000 square feet equipped with modern machinery and automatic packaging equipment, making this factory a model of efficiency in the manufacture of fertilizers, insecticides, weed killers, metal garden items, etc.

While sales representation will still be maintained at 140 Liberty street, New York city, the main office and factory will be at Skillman, N. J., where all correspondence will be handled.

NOW MAKES LAWN MOWERS.

The facilities of the United Airco Assembly, Long Beach, Cal., have been converted to the manufacture of a new lawn mower, the Airco Silent Six. Made from die-cast aluminum and weighing less than twenty-five pounds, the mower assembly is 6-bladed. Equipped with semipneumatic rubber tires, the new lawn mower is mounted on precision ball bearings, a factor, combined with machine fitted parts, that makes it exceptionally quiet in operation and easy to push. Adjustable to close, even cutting, the Airco Silent Six is sturdily constructed throughout for long, hard service.

NURSERYMEN!

KER-O-KIL WEED BURNERS

are used for clearing seedbeds, walks and paths, of weeds.

Write for FREE Circular 44M.

KER-O-KIL MFG. CO.

Redwood City, California, or Gettysburg, Pa.



CUPRINOL

Preserves Wood from Rot.

Dyed Green—Serves as Priming Coat. INCREASES LIFE OF PAINT WILL NOT HARM PLANTS

1 gal. will cover 400 sq. ft. Gal., \$2.90 per gal. 5 gals., \$2.80 per gal. 50 gals., \$2.70 per gal.

SOMERSET ROSE NURSERY, INC.

P. O. Box 608 New Brunswick, N. J.



METHYL BROMIDE

FOR NURSERY AND GREENHOUSE PLANTS
THE DOW CHEMICAL COMPANY
MIDLAND, MICHIGAN

CHARLES SIZEMORE
Traffic Manager

319 1/2 Georgia St., Louisiana, Mo.

Loss and damage claims against railroad and express companies collected.

Freight bills audited.

Past due notes and accounts collected.

Well known to the nurserymen of the country.

Reference: Bank of Louisiana.

ARIENS-Tiller



THE MOST COMPLETE LINE OF TILLAGE EQUIPMENT IN THE WORLD CAPACITIES 14 IN TO 7 FT CUTTING WIDTHS

ARIENS CO.
Box 710 BRILLTON, WIS

WANT ADS

Help and Situation Wanted and For Sale advertisements.

Display: \$2.50 per inch, each insertion.

Lines: 20c line; minimum order **\$1.00.**

HELP WANTED

NURSERY SUPERINTENDENT

A fine opening, with good salary, for a young man conversant with plant materials, propagation and production. Must be able to handle men, oversee the packing and shipping of our products and give general supervision to outside activities of an up-to-date landscape nursery located in Michigan, near Detroit.

Please give complete outline of experience, training and previous employment.

Address Box No. 371, care of American Nurseryman, 343 S. Dearborn St., Chicago 4, Ill.

HELP WANTED

Salesman for retail nursery, who can make planting suggestions and draw plans. Permanent year-around work and an opportunity for interest in business.

Field foreman for nursery. Must know plants and be able to handle men. Permanent year-around work.

Give age, experience and salary expected. Address Box No. 369, care of American Nurseryman, 343 S. Dearborn St., Chicago 4, Ill.

HELP WANTED

Experienced man to take charge of propagation of evergreens, shrubs, etc. Good opportunity for right man. House available. References required.

BULK'S NURSERIES, Babylon, L. I., N. Y.

HELP WANTED

Man familiar with trade and having ability to write, for survey reporting and sales promotion. Expansion immediately ahead provides exceptional opportunity for right man. Write fully as to qualifications and experience. Address Box 370, American Nurseryman, 343 S. Dearborn St., Chicago 4, Ill.

HELP WANTED

Manager for landscape and nursery business in Massachusetts; old company. Unusual opportunity. Give details, please. Part or full ownership possible. Owner must retire because of illness.

Address Box No. 364, care of American Nurseryman.

HELP WANTED

A plantsman. Steady work with modern nursery, southwestern Pennsylvania.

Address 214 Beerits Building, Somerset, Pa.

SITUATION WANTED

Young married man desires to become established with a reliable landscape nursery to learn more about the business. Good salesman, dependable and enthusiastic. Address Box No. 368, care of American Nurseryman, 343 S. Dearborn St., Chicago 4, Ill.

FOR SALE

Nursery and landscape business, established 15 years by owner; good money-maker; 32 acres, half in growing stock, mostly evergreens, enough to pay for this nursery; on highway 54 one mile from Pratt, Kansas. In prosperous farming community; large selling territory. Fine modern home, lovely landscaped yard, garage, etc. Price \$25,000, some terms. Write

McKNOWN NURSERY, Pratt, Kan.

HELP WANTED

Landscape Architect

A Wisconsin nursery wants a landscape architect. Give details of education and experience, also references and salary expected. Address Box No. 363, care of American Nurseryman.

HELP WANTED

Permanent position for a man with some propagation experience, by budding, grafting, growing from seeds, etc. Will furnish house with garden spot, chicken house and cow pasture. Returned serviceman preferred.

BENTON COUNTY NURSERY CO., INC.
Rogers, Ark.

HELP WANTED

POSTWAR PLANNING.
We have made our plans, starting now, to increase our organization and want expert Tree Climbers, Landscape Nursery Foremen and Landscape Salesmen. Permanent year-around work.

MILLANE NURSERIES,
Cromwell, Conn.

HELP WANTED

Man, preferably 25 to 35 years old, with high school education and some college training who can do tree work, landscape planting and construction work. Must have references.

Address Box 361, care of American Nurseryman.

HELP WANTED

Experienced grower capable of propagating shrubs, evergreens and perennials. Greenhouse and coldframe facilities. Good salary.

WILLIS NURSERY CO.
Ottawa, Kansas

HELP WANTED

An experienced middle-aged nurseryman, capable of handling the supervision, filling, packing and shipping of our mail-order nursery orders. This is for permanent employment in a thriving business, with limited number of listed items comprising, briefly, a few hardy perennials, small berry fruits and roses. Pleasant surroundings. Excellent opportunity for the right person for a permanent position with good income. 6-room house available on property for man with family. State experience.

CONDON BROS. SEEDSMEN
632 Cedar St., Rockford, Ill.

HELP WANTED

Well established retail and landscape nursery in the Kansas City territory has openings for two experienced nurserymen; steady work, good pay. State experience, age and salary expected.

SHAWNEE NURSERIES
7300 West No. 50 Highway
Shawnee, Kansas.

INDIVIDUAL LANDSCAPE PLANS

Landscape architect with 30 years' experience offers individual plans and consulting service to nurserymen and landscape contractors operating in the Chicago area and within a 200-mile radius. Reasonable fees, limited clientele, protected territory. Correspondence invited. Address Box 362, care of American Nurseryman.

TO SERVICE MEN

Returned service men and women may insert a one-inch situation wanted advertisement in this department without charge. Listing in the placement service of the American Nurseryman will be included.

Instead of remittance, send full address of military unit when mustered out and date of discharge from the service.

HODGES AT SAN ANTONIO.

J. Fred Hodges has opened Hodges Nursery & Flower Shop at 201 Barrett place, San Antonio, Tex. Last summer he closed the Fred Hodges Nursery at Potet, Tex., to take a course in floral designing under the Veterans' Administration vocational rehabilitation plan. He had been in the nursery business since the spring of 1937 with the exception of the time when he was in the army air force and while he was taking the vocational course.

The nursery at San Antonio consists of a 30x100-foot sales yard with a 30x30-foot building, both considerably expanded over last year. The building houses the flower shop, workroom, garage and storage room. The building faces Gaynor street, and the entrance to the nursery and flower shop is on that side street, while the mailing address is that of the Hodges home on Barrett place. Improvements are being made, and he hopes to have construction completed in the fall.

WHILE fuel oil has been released from rationing, the shortage of coal is not expected to be overcome soon. Greenhouse operators should get in their supply early.

RESTRICTIONS on the movement of cut flowers from the Japanese beetle area will be lifted September 30 by the United States Department of Agriculture. This year restrictions on the movement of fruits and vegetables, except green ear corn, were lifted as of August 30 and for green ear corn as of September 12.

OBITUARY.

William A. Toole.

William A. Toole, of Gary-nee-Dule, Baraboo, Wis., died suddenly July 25. Mr. Toole was stricken at a railroad station at Baraboo, when he and his wife were about to board a train to visit relatives in Kentucky, and he died before an ambulance could take him to a hospital. He was 61 years old.

Mr. Toole was born at Excelsior in 1884. He attended the college of agriculture at the University of Wisconsin, graduating with the class of 1904, and studied botany under Professor Crocker at Chicago. He was the son of the late William Toole, Sr., well known pansy grower at Baraboo, who established his firm in 1887, later famous for its specialties in herbs.

He was active in the Wisconsin Horticultural Society, at one time or another holding positions of corresponding secretary, treasurer, president and member of the board of managers and board of directors. Mr. Toole had an outdoor garden and two indoor dioramas at the 1934 world's fair at Chicago; he exhibited at the 1935 national flower show at Milwaukee, and he held a number of shows at his nursery.

An honorary recognition certificate of the Wisconsin Horticultural Society was presented to Mr. Toole in 1941, in recognition of "his devotion to the culture of plants and flowers; forever giving freely of his services and knowledge, and inspiring in others an enduring love of plants." He was the author of many articles on horticulture.

Mr. Toole is survived by his widow, Mrs. Flora R. Toole, and two brothers, Eben, of Lanham, Md., and John, of Brookfield, Ill.

CAMELLIAS ON THE AIR.

Sales promotion is not always a calculated business investment of dollars and cents; frequently it follows friendly acts that receive more than personal appreciation. J. S. Tormey, proprietor of Tormey's Gardens, Temple City, Cal., learned this from experience with his 24-page booklet on camellias. Half of the pages carry beautiful reproductions in colors of two or more blooms as a means to straighten out the tangled nomenclature of camellias, which was one of the important objects of Mr. Tormey in issuing this valuable booklet describing varieties.

Requests for the booklet came lately from hospitalized servicemen accompanied by payment of the nom-

PAPER and WOOD LABELS

Printed - Plain - Painted

PRINTED WOOD LABELS—200 of variety or your name and address—3 lines

4"x1/2" POT LABELS—Price per M—	5M—4.00	10M—3.75	25M—3.50	50M—3.25
5"x1/2" " " " " " "	5M—4.50	10M—4.00	25M—3.75	50M—3.50
6"x1/2" " " " " " "	5M—5.00	10M—4.25	25M—4.00	50M—3.75
3 1/2"x1/2" TREE LABELS " " " "	5M—4.50	10M—4.00	25M—3.75	50M—3.50

CEDAR EXTRA WIDE WOOD LABELS—Printed 3 lines—Minimum 5M—500 of a kind

5 3/4"x7/8" 5M—	5.00	10M—4.50	25M—4.00	50M—3.50
5 3/4"x1" 5M—	5.25	10M—4.75	25M—4.25	50M—3.75

PAPER LABELS—Printed

7"x1/2" ROSE LABELS—Multiples of 100 of variety	\$1.75 per 1000
9"x1/2" FRUIT LABELS—Multiples of 100 of variety	\$2.25 per 1000
9"x1/2" WHITE ADVERTISING LABELS—3 lines 1M—	3.50 5M—15.00 10M—27.50
9"x1/2" RED "SOLD" LABELS—Your name, address 1M—	3.75 5M—16.25 10M—30.00

RUBBER BUDDING AND GRAFTING STRIPS

4"x3/16" Approximately 1500 to lb.	} 1 to 9 lbs. \$1.50 lb. 10 to 49 lbs. \$1.20 lb. 50 to 99 lbs. \$1.00 lb. 100 to 500 lbs. \$.90 lb.
6"x3/16" Approximately 1000 to lb.	
5"x3/16" Approximately 1200 to lb.	

PRICES F.O.B. YOUR DOOR—10% EXTRA EAST OF THE ROCKIES.
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It will help to solve your labor problem.

We are now in a position to make immediate delivery.

SPECIFICATIONS

Equipped with Jumbo Balloon Tires and Tubes, 12x4 inches.
Specially Designed Curved Nose.
All-steel Construction, electrically welded.
Weight 56 pounds.
Over-all Length 63 inches.
Over-all Width 27 1/2 inches.
Capacity 28-in. Ball weighing 600 pounds.

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Dept. A

Wilmette, Ill.

New and Guaranteed Used

Steel Pipe and Boiler Tubes
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Buildings, Valves and Fittings.

JOS. GREENSPON'S SON PIPE CORP.
National Stock Yards St. Clair Co., Ill.

inal charge made for the booklet. In forwarding the booklet in response to these requests from hospitalized servicemen, Mr. Tormey sent a cheery note together with a refund. In reply the servicemen frequently wrote of the appeal of the handsome camellia pictures, so lonesome did the hospital inmates feel for sight of a garden and flowers.

One of these letters from servicemen was sent to Art Baker, who handles several programs of the National Broadcasting Co., on which he often mentions the things that interest the soldiers. Art Baker told the story and read the letter, as illustrative of the soldiers' interest in pictures other than those of pin-up girls.

The consequence of the broadcast was a decided stimulus to the Tormey camellia business from distant points. Besides showing the interest which servicemen have in flowers and plants among the things of home, the incident demonstrates a means whereby wider notice is brought to the things that nurserymen sell.

COVER ILLUSTRATION.

Ilex Cornuta.

Ilex cornuta is a native of east China and, as it is grown in this country, it becomes a small tree or dense bush with upright spreading branches. The branches are somewhat coarser than those of the native holly, *Ilex opaca*. *Ilex cornuta* is not sufficiently hardy north of Tennessee and Virginia to be recommended extensively for landscape planting. It may be used in a limited way in protected situations as far north as the Ohio river and Philadelphia.

The Chinese holly is quite easily distinguished from the American holly by the shape and size of its leaves. The leaves are somewhat larger than those of the American holly, are glossy green and bear three strong spines at the broad apex of the leaves. The leaves are short-stalked and, because of the broad apex, they appear to be of a broad oblong-rectangular shape. It is also common to find one or two strong spines developing at the base of the leaves.

The outstanding characteristic of the Chinese holly is the large bright red fruits ripening in August and September. The fruits are larger than those on the American holly and more clustered.

It is unfortunate that the Chinese holly is not more reliably hardy so that it can be grown over an extensive area. Its culture and use are limited to the south. In recent years a

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For Bunch Vegetables, Cut Flowers, Nursery Stock



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Milwaukee 6 Wisconsin

ATTENTION NURSERYMEN!



IMP. SOAP SPRAY

Use 1 part with 25 to 40 parts of water

Ask your nearest seedsman, or write for literature.

THE AMERICAN COLOR AND CHEMICAL CO.
178 Purchase St. Boston, Mass.

variety of *Ilex cornuta* known as the Burford holly has made its appearance in the trade. This type differs from the Chinese holly in two respects, namely, the shape of its leaf and its hardiness. The leaves of the Burford holly are nearly entire or show the development of a pair of spiny teeth near the apex of the leaf. The fruits of this variety are somewhat larger than those of the species, and at least some of the flowers on the plants are bisexual, as single plants in the greenhouse have set fruit. From limited trials, the Burford holly seems to be somewhat harder than the species and is said to be quite satisfactory from Philadelphia south. It has been tried in the vicinity of Columbus, O., on several occasions, but unless it is in



Extends Transplanting Season—Reduces Losses



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BACTO makes rich fertilizer out of waste—leaves, garbage, etc. QUICKLY, at cost of only few cents. Contains billions of live bacteria. 8 lbs., \$1.75; 25 lbs., \$5.49. An amazing product. (8 lbs. treats ¼ ton.)
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The perfect mulch and soil conditioner
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Tools — Grafting Supplies

Write for Bulletin.

well protected situations, the winter injury is too extensive to warrant recommending its planting except in limited situations.

The Chinese holly requires a rich, well drained soil, as is characteristic of most of the hollies. It probably does best in sunny exposures, although it may stand a limited amount of shade. Propagation of the species is usually by seeds and that of the variety Burfordi by soft or semimature cuttings.

Chinese holly and its variety burfordi will be used where they are sufficiently hardy as small specimen plants, for group planting and as a small tree or bushy shrub for the informal border. L. C. C.

CATALOGS RECEIVED.

Bryant's Nurseries, Princeton, Ill.—Wholesale price list of peonies and evergreens, 12 pages, 6x9 inches.

Charles Fiore Nurseries, Prairie View, Ill.—Wholesale price list of trees, shrubs, evergreens, vines, fruit trees and perennials, 36 pages and cover, 3 $\frac{3}{8}$ x9 $\frac{1}{2}$ inches.

Golf Nursery, Northbrook, Ill.—Wholesale price list of evergreens, trees, shrubs, vines, fruit trees and peonies, 30 pages and cover, 5 $\frac{1}{8}$ x8 $\frac{1}{2}$ inches.

Columbia & Okanogan Nursery Co., Wenatchee, Wash.—Fortieth anniversary price list of fruit trees and small fruit plants, evergreens, shade and ornamental trees, flowering shrubs, roses and peonies, 24 pages and cover, 4x9 $\frac{1}{4}$ inches.

Tobe's Treery, Niagara-on-the-Lake, Ont., Can.—Retail catalog of nursery stock, garden supplies, seeds and bulbs, with illustrations, cover in color, 36 pages, 8 $\frac{1}{2}$ x11 $\frac{1}{2}$ inches.

Wayside Gardens, Mentor, O.—Autumn retail catalog of bulbs, perennials, roses, flowering trees and shrubs, with illustrations, some in color, 72 pages and cover, 8x10 $\frac{1}{2}$ inches.

Jackson & Perkins Co., Newark, N. Y.—Retail catalog of roses, perennials, fruit trees and flowering shrubs, handsomely illustrated in color, 32 pages, 9x11 $\frac{3}{4}$.

W. Atlee Burpee Co., Philadelphia, Pa.—Retail catalog of bulbs and flower seeds, with descriptions and illustrations, cover in color, 24 pages and cover, 6x9 inches.

Willis Nursery Co., Ottawa, Kan.—Six-page price list of evergreens.

Tormey's Gardens, Temple City, Cal.—"Camellias of Merit," with descriptions and illustrations in color, 24 pages, 4 $\frac{1}{4}$ x9 $\frac{3}{8}$ inches.

Farr Nursery Co., Weiser Park, Pa.—Catalog of day lilies and also catalog of lilacs, both with descriptions and illustrations, 16 pages, 5 $\frac{1}{2}$ x8 $\frac{1}{2}$ inches.

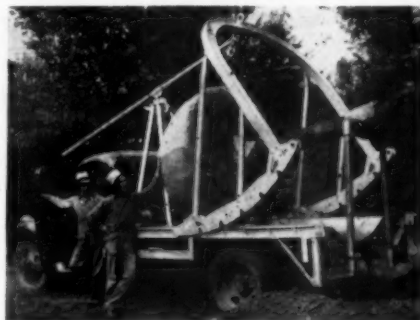
Krieger's Wholesale Nursery, Bridgman, Mich.—Wholesale price list of small fruit plants, 6-page folder, 4x8 $\frac{1}{4}$ inches.

Fox Nursery, Elkhart, Ind.—Wholesale price list of hardy chrysanthemums, 6-page folder, 3 $\frac{3}{4}$ x8 $\frac{1}{2}$ inches.

F. M. Crayton & Sons, Asheville, N. C.—Wholesale price list of trees, shrubs, hardy perennials and ferns, 8-page folder, 3 $\frac{1}{2}$ x8 $\frac{1}{2}$ inches.

Mrs. Leonard Howard, Greenville, S. C.—Retail price list of hemerocallis, 8-page folder, 4x9 inches; also 4-page trade list of hemerocallis, 4x9 inches.

AUTOMOTIVE TREE MOVERS



After many years devoted to the development and manufacture of tree movers, Williams & Harvey are again starting to produce the latest model Rocker Type Tree Mover.

These machines have been thoroughly tested, not only in our nursery, but by others during the war period. The simplicity in the operation of this mover, plus demountable features, cuts the cost of moving big trees. Write for particulars.



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The Plant Food that Made Gardening Worth While.

Saves nurserymen thousands of dollars on replacements. When used in the nursery, it increases greatly the percentage of first-class stock at digging time. These facts, together with the liberal discount offered to nurserymen for resale, make RA-PID-GRO a natural.

The largest nurseries in the country are now using and reselling

RA-PID-GRO, The Miracle Plant Food.

For full information write:

RA-PID-GRO CORPORATION, Dansville, N. Y.

LIMITED quantities of DDT have already found their way into insecticides for household use, being advertised to the public. Some preparations for plant insects are also offered. Care should be exercised in their use until the effects are well understood.

FRED J. BORSCH returned late last month from a trip across the continent to visit various mail-order houses and is now engaged in making plans for the season ahead in the mail-order department of Doty & Doerner, Inc., Portland, Ore., which he will superintend.

NOTES FROM A NURSERYMAN'S WIFE

From Time: People who had nothing better to worry about last week noted a strong dendrophile tendency in the Big Three. (Note: dendrophile—one who is tree-loving, living in or on trees.) They could not stay away from trees. There had been Bretton Woods and Dumbarton Oaks. Now they were at Potsdam, a German version of the old Slavonic name, Poztupimi, which means "under the oaks."

As a nurseryman's wife, we could think of lots worse things to be!

The Montreal Star is authority for the statement that the Dutch in the Netherlands have sown many pounds of flower seeds—mainly marguerites—in the rubble created by German bombings of Rotterdam in 1940. The marguerite is a symbol of Dutch courage and patriotism. The youngest princess of the Netherlands royal house, born in Ottawa, Canada, was named Margriet after this flower.

In 1943 we read that experts were keeping close watch of the bombed soil of London for a flower that had not been seen since the first great fire of London, 270 years ago. It is called the London rocket, a plant about two feet high with a whitish flower. The expectation that it would reappear was based on the fact that already ninety-five types of flowers and shrubs, unknown in London for years, were then flourishing on bombed sites in that great English city. They thrive, it is said, on nitrates which are increased in the soil by burning.

Marquis Childs, in the current Geographic, speaking of these wild flowers that have sprung up in the ruins "to soften the worst scars of the battle for London," says that among Londoners a legend soon took hold. These were not ordinary wild flowers. They were species that had long been extinct. It was thought that old-time seeds had been preserved in cellars long since built over by the newer London, which had been released by the bombs and spread quickly in ash-fertilized soil. But Dr. E. J. Salisbury, director of the Royal Botanic Gardens at Kew, shattered this legend. The London rocket had not reappeared, he said, and most of the species were common wild flowers.

The commonest was the rose-bay willow herb, known also as fireweed (*Epilobium angustifolium*). Another



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Quick, easy sales at top prices.

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Plan to Use

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FOR YOUR CHRYSANTHEMUMS
AND OTHER PERENNIALS

Our Perennial Pots are a companion to our Cloverset Rose Pots—same style, same shape, same quality stock, only smaller. They are 6 inches high, 5½ inches in diameter at bottom, 6 inches in diameter at top and hold about eight pounds of soil. They have same capacity as 7-inch clay pot, giving ample space for fine root development and taking up little room in your sales yard. One dozen of them can be lifted out of the frame and delivered to your customer's car in less time than is required to dig and wrap one single plant out of the field row.

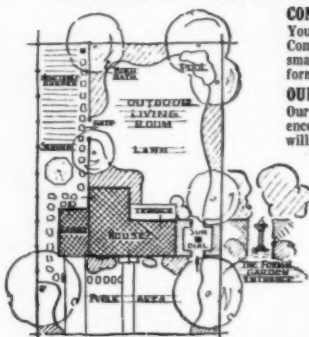
Write for illustrated circulars and full particulars. Sample Carton, all sizes, 25c

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Your design problems solved by our Landscape Architects. Complete plans made from your surveys, \$25 for average small home grounds. Plant lists for plans included in proper form so that you can supply plants from your stock.

OUR EXPERTS FAMILIAR WITH LOCAL CONDITIONS
Our Landscape Architects and Horticulturists have had experience in every state in the country. Our plans and plant lists will be designed to suit conditions in your area.

TRAINING SERVICE

A complete home training in LANDSCAPE GARDENING for both those who wish to enter or advance in this field and for those who wish to learn for their own use and pleasure. Course No. 1 for home use. Course No. 2 for professional use.

Information Available

BULLETIN A contains complete outline of design service plan, including costs.

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Propagating . . . Mulching
Soil Conditioning

Write for quotation on quality acid or neutral peats, furnished in triple-walled paper bags or burlap bags.

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We specialize on bulk carloads to nurserymen.

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Shredded, bulk carload, \$12.00 ton (15-ton minimum).

PEAT HUMUS, Bulk carload, \$8.00 ton (20-ton minimum).

SPHAGNUM MOSS, 16 to 20-lb. bale, \$1.25, or 7c per lb.

TULIPS, 50 Named varieties, 3's, \$30.00; 10's, \$35.00; 11's, \$45.00; 12's, \$50.00 per 1000.

Mixed, \$5.00 less.

NORWAY and WHITE SPRUCE (Compact B&B), 18 to 24 ins., 50c; 24 to 30 ins., 65c.

AMERICAN ARBORVITAE (Compact B&B), 18 to 24 ins., 50c; 24 to 30 ins., 60c.

ASPARAGUS ROOTS (Washington), 1-yr., \$5.00 per 1000; 2-yr., \$12.00 per 1000.

RED RASPBERRIES, No. 1, Washington, \$35.00 per 1000; Newburgh, \$35.00 per 1000.

NIAGARA HORTICULTURAL PRODUCTS

St. Catharines, Ont., Canada.

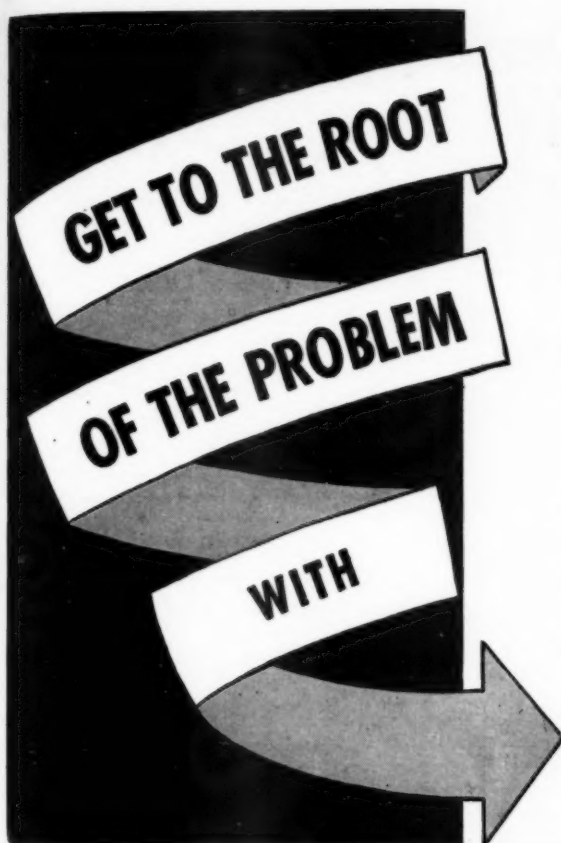


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Cuttings
and Seeds
Bulbs and Tubers

Scientific Growth Stimulant

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● **NURSERYMEN KNOW** that it's what goes on *below* the surface that counts. Healthy roots make healthy plants. Cut down transplanting losses by soaking soil around the roots with **TRANSPANTONE** solution or soak bare-root plants overnight in a barrel of the solution before replanting.

TRANSPANTONE, the plant hormone, reduces wilting and starts active growth *sooner* after the shock of transplanting.

Treat broad and narrow-leaf evergreens, deciduous trees and shrubs with **TRANSPANTONE** solution and get a strong, healthy growth right through the season. The treatment will not interfere with proper hardening of the wood before winter.

A 3-oz. can of **TRANSPANTONE** costs \$1.00

A 1-lb. can of **TRANSPANTONE** costs \$4.00

One pound makes 160 gallons of transplanting solution for treatment of trees and shrubs or 1600 gallons of solution for seedlings and soft-tissued plants.

Write today for our special proposition to nurserymen.

AMERICAN CHEMICAL PAINT COMPANY
Horticultural Division AMBLER, PENNA.

Reg. U. S. Pat. Off.
TRANSPANTONE

plant was a species of groundsel, Oxford ragwort, native to the scoria of Sicily and abundant on the slopes of Vesuvius. Still another was a native of Peru, known popularly as "gallant soldiers" or "soldiers of the queen," which had escaped from Kew Gardens. The Canadian fleabane also made a place for itself.

Something that botanists are at a loss to explain is that an apple tree, filled with young fruit, bloomed a week after it had been torn partly out of the ground and its leaves stripped off. The same thing happened to a lilac bush.

Mr. Childs concludes: "Even though London newspapers during the war have been held to about eight pages, these botanical phenomena were duly reported. There were letters to the Times from flower lovers, and appropriate editorials. It took more than a blitz, more than vengeance weapons, to deflect the interests and the curiosities of the British public. They were grateful for this small measure of beauty in the midst of so much destruction."

A long article could be written on seeds. Take the size of seeds, for instance. There is little relation between the size of seeds and the size of the plants that grow from them. Oaks and walnuts are big trees that

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♦ Insects and Worms — destroyed vegetation — reduced leaf area — stunted growth — these are some of the problems of the shade tree grower. Get our illustrated booklet that describes the use of "Black Leaf 40" in controlling certain insects on shade trees. Lists insects — gives dosage.

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Book A. Illustrates in full color 235 standard nursery items, brief description, substantially bound. Price in small lots, 75c each.

Descriptive Nursery Catalog

Nicely illustrated, 48 pages and cover. 18c each in small lots.

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A pocket-size 48-page booklet. Very complete but concise information, well illustrated. Helpful in preventing claims for dead stock that cost nurserymen money. Sample, 10c. Write for discounts on quantities.

Will send sample copy of each of the above on receipt of \$1.00. Cash with order.

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COMPANY**
DERRY, N. H.

"COTTONETTE" Nursery Squares
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LIVE SPHAGNUM MOSS
RAFFIA for budding, etc.

Write for prices; state requirements.

NEW AMSTERDAM IMPORT CO.
122 Chambers St. New York 7, N. Y.

grow from big seeds, but elms and cottonwoods are just as big and grow from little seeds.

The largest conifer seeds are the pinons, or pinyons, but their gnarled trees are not very big. On the other hand, the sequoias and redwoods grow from an ordinary-size seed.

Coconuts are big seeds, the biggest of all seeds being the twin coconuts, always in pairs and as big as footballs, that grow in the Seychelles islands.

The mustard seed of the Biblical parable is small, but the seeds of orchids, poppies, portulacas and pinks are practically dust-size. Mistletoe seeds are so small and so buried in the sticky berry that the Druids of old thought the plant had no seeds and that its propagation was supernatural. Now we know that the seeds are carried by birds who wipe them off when they clean their bills on bark. At that it is a spooky thing, living off a host instead of sinking roots into soil.

Nine years on a cattle ranch made us respectful toward buffalo grass, on which cattle thrive even when it is short and brown in the heat and drought of summer. The only trouble was its stubborn seeds, which practically refused to germinate; the grass instead spread by its root system. We recall a big square of prairie which grew up to weeds, never good grass. It was said that it had been roped off as a corral years before in cow-trail days, and the buffalo grass which had grown there never grew back.

Well, according to John Bird in the Saturday Evening Post, Leon E. Wenger, grass specialist of the Department of Agriculture at Fort Hays experiment station, Hays, Kan., has solved the riddle of the non-germinating seeds. He took some seeds and froze them (winter), soaked them in acid (exposure in ground), heated them (summer), washed them and dried them, and when they were planted, the stuff began to grow right away. Now the process has been standardized and mechanized, and seeds are being delivered to the army, to the Soil Conservation Service and to farmers.

The Santa Fe magazine tells of a native son of California who was driving with a trailer through a hollow tree which served as a bridge over a ravine that was too deep and wide to build a bridge across. He met a big moving van coming from the other end. Since he couldn't back up or go ahead, he just edged the trailer into a hollow branch and let the other fellow go by. Next!

HYPONEX PLANT FOOD

Grows Superior Plants in Poorest Soil Sand, Cinders or Water

Used by florists, farmers and gardeners for:

FEEDING—flowers, vegetables, lawn and trees.
TOP DRESSING—soluble—plants absorb it quickly.
SEED GERMINATION—helps to prevent damping-off.

CUTTINGS—keeps succulent until transplanted.
TRANSPLANTING—helps reduce shock and wilting.

This clean, odorless powder produces stronger root system with more feeding branches; greater substance in stems, more and larger flowers or fruit. Does not burn roots or foliage when used in solution form as directed.

Sell HYPONEX to your customers for their gardens and house plants. Nationally advertised.

1-oz. pkg. retails 10c—packed 72 to case.

3-oz. can retails 25c—packed 36 to case.

1-lb. can retails \$1.00—packed 12 to case.

Also in 10, 25, 50 and 100-lb. drums.

Write jobber or us for dealer and grower prices.

Buy from your jobber or send 10c for 1-oz. sample (makes 6 gallons) or \$1.00 for 1 lb. (makes 100 gallons). Dollar credited on first order for 1 case for resale or drum for your own use.

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IT COSTS NO MORE (and in most instances less)

FOR OUR PACKING OF Nursery Burlap Squares and Rolls

Write for prices and samples.

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MADAGASCAR in A.A.
Westcoast and X. X. Superior
CONGO and CONGO SUPERIOR
Also
GOODRICH BUDDING STRIPS
Write for prices.
THOMAS B. MEEHAN CO.
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GENUINE MOSS PEAT

Hydraulic pressed bales and smaller resale packages. Sphagnum Moss, Cultivated Peat Humus.

Shipped from Northern plant at Floodwood, Minn., and Hanlontown, Iowa. Annual capacity 1,000 carloads.

Now booking for present and future deliveries.

Write or wire for quotations.

Colby Pioneer Peat Co., Inc.
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ZIP-STAY LABELS



MARKHAM'S OHIO NURSERY
ELYRIA, OHIO

Immediate shipment on plain labels up to 25,000. Write for price list.

MARKHAM'S OHIO NURSERY, Elyria, Ohio



Directing Dollars to Your Store

You must have seen it—that widespread HUDSON advertising appearing from coast to coast in nationally circulated as well as leading sectional magazines.

It's part of HUDSON'S broad plan of dealer support to help HUDSON dealers get the lion's share of the market when war-time savings are being spent.

The current campaign totals 6,526,240 messages—all of them recommending *your* store as *the* place to buy.

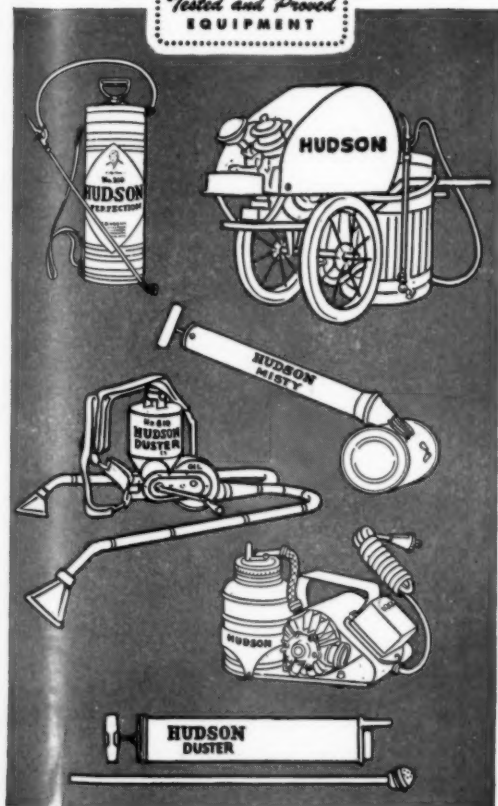
With equipment that's already widely accepted . . . with national advertising timed to prepare the way for the outpouring of consumer dollars . . . with a new program that will be more profitable to dealers . . . with more sales-making merchandising help on the way . . . HUDSON is your best bet in the years ahead. Select HUDSON *now* for a bigger share of post-war profits.

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Buy More Bonds and KEEP Them . . . Increase Your Stake in America's Future



LINING-OUT EVERGREENS

FALL 1945 — SPRING 1946

The following are selected items from our Fall Wholesale Catalog. Most Evergreens are in short supply. These items are available at this time, but are offered subject to prior sale.

	Inches	Each Per 100	Each Per 1000
Chinese Juniper.....	12 to 18 xx field	\$0.35	\$0.32
Pfitzer Juniper.....	8 to 10 xx frames	.28	.25
Pfitzer Juniper.....	10 to 12 xx frames	.33	.30
Norway Spruce.....	12 to 15 xx frames	.25	.23
Norway Spruce.....	12 to 18 xx field	.33	.30
Norway Spruce.....	18 to 24 xx field	.38	.35
Silver Norway Spruce.....	15 to 18 xx frames	.40	...
Nest Spruce.....	3 to 4 xx flats	.15	...
Dwarf Alberta Spruce.....	3 to 4 xx flats	.20	...
Black Hills Spruce.....	10 to 12 xx frames	.17	.14
Black Hills Spruce.....	12 to 18 xx field	.40	.37
Colorado Spruce.....	8 to 10 xx frames	.19	.16
Colorado Spruce.....	10 to 12 xx field	.28	.25
Mugho Pine.....	6 x 6 xx frames	.23	.20
Mugho Pine.....	8 to 10 xx frames	.38	.35
Austrian Pine.....	8 to 10 xx frames	.23	.20
Austrian Pine.....	10 to 12 xx frames	.25	.22
White Pine.....	8 to 10 xx field	.18	.15
Scotch Pine.....	12 to 18 xx field	.36	.33
Douglas Fir.....	8 to 10 xx frames	.23	.20
Douglas Fir.....	10 to 12 xx field	.25	.22
Douglas Fir.....	12 to 15 xx field	.30	.27
Upright Japanese Yew.....	6 to 8 xx frames	.33	.30
Upright Japanese Yew.....	8 to 10 xx frames	.38	.35
Spreading Japanese Yew.....	8 to 10 xx frames	.38	.35
Spreading Japanese Yew.....	10 to 12 xx frames	.43	.40
Spreading Japanese Yew.....	12 to 15 xx frames	.53	.50
Brown's Yew.....	10 to 12 xx frames	.43	.40
Hatfield Yew.....	8 to 10 xx frames	.38	.35
Hill Pyramidal Yew.....	8 to 10 xx frames	.38	.35
Ward's Yew.....	8 to 10 xx frames	.38	.35
Japanese Yew—Media No. 1.....	8 to 10 xx frames	.38	.35
Hicks' Yew.....	8 to 10 xx frames	.30	.27
American Arborvitae.....	10 to 12 xx frames	.18	.15
Pyramidal Arborvitae.....	4 to 6 x flats	.18	.15
Canada Hemlock.....	6 to 8 xx frames	.30	.27
Canada Hemlock.....	10 to 12 xx frames	.35	.32
Canada Hemlock.....	15 to 18 xx frames	.48	.45
Japanese Spurge.....	6 to 8 xx frames	.12	.11
Purpleleaf Wintercreeper.....	8 to 10 xx flats	.20	.17
Bigleaf Wintercreeper.....	6 to 8 xx flats	.18	.15
Bigleaf Wintercreeper.....	8 to 10 xx flats	.20	.17

Our Wholesale Catalog will be ready for mailing soon after September 1.

D. HILL NURSERY COMPANY
 EVERGREEN SPECIALISTS — LARGEST GROWERS IN AMERICA
 DUNDEE, ILLINOIS